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The BLUE JAY

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FOR SASKATCHEWAN AND ADJACENT REGIONS

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The Coyote

Photo by Robert R. Taylor, October, 1965

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Regina, Saskatchewan

WETLANDS PRESERVATION AND WATERFOWL RESEARCH

All Canadian hunters must now buy a two dollar Canada Migratory Game Bird Hunting Permit. By doing this they are, according to the permit, "contributing to Canada's expanding program of wetlands preservation and waterfowl research and management."

The federal government should be commended for announcing and actively embarking on definite wildlife programs. First, Canada's Wildlife Policy and Program was tabled in the House of Commons in April, 1966, committing Canada to an accelerating program which may spend \$60 million in the next ten years. Much of this will be spent on "the preservation of major waterfowl production areas by leasing, to prevent draining, filling, or burning of the surrounding vegetation." Some money will also be spent on research and scholarships to encourage the training of more wildlife biologists.

Second, the Canada Migratory Game Bird Hunting Permit—expected to bring in some \$700,000 in 1966—will allow the Canadian Wildlife Service to set up an annual survey of hunting pressure. The results of the survey will tell how many people hunt migratory birds, where and when they hunt, how many birds are killed and where and when these birds are killed. The Canadian Wildlife Service explains, "only through sound management, based on knowledge obtained with your (the hunters') cooperation, can we hope to ensure migratory bird hunting for the future."

Migratory birds are a national resource and our federal government must, in so far as it can, ensure the future success of these birds. It must deal with the governments of other countries to see for example that they ensure the safety of our birds during the winter months. There has been a strong feeling that the Canadian Government has not been active

enough in dealing with the provincial governments and with foreign governments regarding our waterfowl resource. Why, for instance, should U.S. biologists contribute so much to spring and summer duck surveys while Canada takes no part in winter-ground duck surveys? Why do American hunters through Ducks Unlimited do so much about making inventories and preserving our wetlands while we do so little? If the Americans count and pay for the raising of ducks in Canada then it may seem reasonable that the Americans should determine how many ducks could, fairly, be shot in Canada.

Today wetlands are threatened by the demand for greater food production and the ease with which land may be levelled or drained. The need for food will continue to increase as transportation problems are solved and populations increase. In spite of our record-breaking crop, the amount of food per person in the world decreased appreciably again this year. The land, however, should not be solely under the jurisdiction of agriculture. It has, for instance, to produce wildlife and this resource is of real value to the nation. It is estimated that the U.S. sportsmen spent over four billion dollars to hunt and fish in 1965. Others who do not hunt or fish probably spent even more in the pursuit of wildlife.

The preserving of wetlands is an urgent problem needing prompt and vigorous action. Hunters by buying hunting permits are helping to solve the problem. The Canadian government should also make it possible for hunters and non-hunters to contribute to the preservation of our wetlands by asking them to buy wildlife or wetland stamps and by accepting the gifts, bequests and donations of all those wishing to contribute to programs of land acquisition for wildlife. We must spend money now if we want to have migratory birds in the future.

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MAURICE G. STREET, 1910 - 1966

Maurice George Street was a quiet, modest man—as Reverend Roderick said at his funeral sermon, Maurice was a listener. Yet beneath his unassuming countenance was the intellect and methodicity of the scientist and the heart of the true naturalist. He was that rarity, a self-taught naturalist who learned much more from nature than from books.

Maurice was born at Whiteparish, Wiltshire, England, on September 28, 1910 and was only three years old in November 1913 when his parents emigrated to Canada and homesteaded near Moose Range post office, two miles from the Carrot River. Today, after drainage and burning of the six to 24-inch layer of peat moss, the area is rated among the best agricultural land in Saskatchewan, but it is hard to imagine the land as Maurice's brother Stanley describes it in 1913. Then Tisdale, the nearest town, was accessible only in winter when the meadows and bogs were frozen. In summer, Star City was the closest point, some 60 miles distant via the sand ridges west of Codette, and then south from Gronlid. The land was covered with willow clumps and grass four feet tall, growing in wet, mossy soil, affected little by attempts at plowing. Any wheat planted wilted and turned yellow before it was two feet high. The only truly arable land was a small garden patch behind the house. The second fall, a raging fire crossed the Carrot River and destroyed all before it, though the Streets' house was saved by the firebreak. The homestead was abandoned after two years and the family lived for one to a few years each on various farms near Aylsham, Codette and Tisdale. Maurice was unable to attend school until he was nine, and then only for five years until he completed his grade eight.

As a child, Maurice spent his evenings and Sundays exploring the nearby woods and marshes with his elder brother Stanley. At the age of 12, he began his egg collection and

started to keep careful records. All interesting observations were faithfully recorded in a small 5¢ notebook which he carried in his pocket, an exemplary habit he followed all his life.

In 1927, Maurice moved to Codette to operate his brother-in-law's farm (Ted Street, but no relation). In 1935, he took over his brother Frank's farm, four miles southeast of Nipawin. In 1938, he moved into Nipawin and was employed by the Imperial Oil bulk dealership, until he died suddenly at work, Thursday, October 27, 1966.

Maurice had infinite patience and found total peace and relaxation while communing with nature. His favorite method was to sit still on a stump or log, perhaps for half an hour, all the while watching with his keen eyes and listening with his gifted ears. In this way, he learned the habits of every resident species of bird in his area. Before the days of bird song records, or even adequate descriptions in books, Maurice learned to identify each species by its song, or in some cases by its call notes. His knack for finding birds' nests was uncanny. His lifetime total for the Nipawin area included 143 breeding species (Lark Sparrow and Osprey added after 1959), 133 with nests and 10 with flightless young. His egg collection included 111 species.

Perhaps one of the greatest contributions of the late Mrs. Isabel M. Priestly and her fledgling mimeographed publication, the *Blue Jay*, was the contact this established with Maurice G. Street. This led to the publication in July, 1943 of Contribution No. 2 of the Yorkton Natural History Society entitled *A List of the Birds of Nipawin, Saskatchewan*. This list contained 196 species and breeding records for 115 species. Not only did it bring records that might otherwise have gone unnoticed to the attention of other naturalists, but new contacts and encouragements



Maurice G. Street, SNHS Summer Meeting, Candle Lake, June 12, 1965

stimulated Street to "fill in the gaps".

Street contributed 21 items to the *Blue Jay* prior to 1960, but in most cases these notes were "lifted" from his lengthy informative letters, or else were only submitted after special encouragement. He always minimized the importance of his own observations. He gained pleasure from every contact with nature and particularly from personal "first" records, but seemed surprised at the degree of interest others showed in his observations. However, when he found the first nest of the Whip-poor-will in Saskatchewan, on June 27, 1956, he was anxious that this discovery should be shared by publishing the record.

When our publication *The Birds of the Saskatchewan River, Carlton to Cumberland* appeared in time for the A.O.U. meeting in Regina in 1959, no one realized how much this depended on Street. I had tried to persuade Maurice to rewrite and expand his Nipawin records for a printed bulletin to appear for the A.O.U. meeting, but without avail. His wife Rose had died November 25, 1957 after two years' illness, leaving him with two young daughters and heavy

medical expenses, so he had no enthusiasm for a major project. Early in 1958, I had the inspiration that we might produce a joint publication to include the historical records for Carlton and Cumberland. He rose to this bait. By the summer of 1958 he had mailed his portion of the manuscript to me, and this fait accompli pressured me into keeping my half of the bargain. What happy times we had together during that week in July 1959 when we made the final revisions of the manuscript. What reminiscences each item brought forth, until late each night! Maurice visited us on a number of other occasions and always he was the unobtrusive helpful guest who made his host feel at home!

Chest pain kept him from the A.O.U. Meeting in Regina in August 1959—and shortly thereafter he was hospitalized with his first coronary thrombosis. The next spring he was able to resume work and restricted field activity. Gradually a high-tone deafness muffled and obliterated the sounds of his beloved warblers. He changed the direction of his activity,

(Continued on page 168)

A PLEA FOR CONSERVATION OF THE BALD EAGLE IN SASKATCHEWAN

by **D. Wayne Davis**, Dept. of Zoology, University of Arkansas, Fayetteville

There is a growing concern among naturalists and conservationists about the welfare and future of the Bald Eagle (*Haliaeetus leucocephalus*) in North America. Poisoning from predator baits, a lowering of reproductive performance by pesticides, illegal shooting, breaking of eggs and killing of young, chopping down of nest trees, and destruction of habitat, all probably have contributed to the drastic decline in numbers of this magnificent bird. Northern Saskatchewan is one of the remaining great inland nesting areas of the Bald Eagle. However, unless appropriate steps are taken to insure the survival of this bird, it may face extirpation even in this remote region during this century. It is the purpose of this paper to report some observations of Bald Eagles, to cite examples of predation by man on this bird, and to offer suggestions for preventing their destruction.

The information presented herein was gathered by me from 1960 to 1966 during a mammal survey and a study of the ecology of the Northern Flying Squirrel and the Red Squirrel. These projects were supported by the Institute for Northern Studies at the University of Saskatchewan, the U.S. National Science Foundation and the Wildlife Branch of the Saskatchewan Department of Natural Resources. Thanks are due to W. H. Beck, C. L. Ferguson, C. S. Houston, D. James, R. W. Nero, several conservation officers, trappers, commercial fishermen and many others. Thanks are also due to the Saskatchewan Natural History Society for allowing me access to their Prairie Nest Records Scheme.

A number of authors have referred to an appreciable reduction in Bald Eagle numbers, especially of the subspecies *Haliaeetus leucocephalus leucocephalus* (Linnaeus), which occurs from Eastern Canada to Mexico. The subspecies found across the northern U.S. and Canada, *H. l. alascanus*

Townsend, may be increasing in number in Alaska where legislation protecting this bird was passed in 1952 (Imler and Kalmbach, 1955). Prince Philip recently referred to the Bald Eagle as a bird in danger of becoming extinct. Alexander Sprunt IV, Director of Research for the National Audubon Society, says, "The Bald Eagle is probably undergoing a slow decline" (Dunkeson, 1966). Persecution of the eagle in Canada is no recent event as attested by Taverner (1934) who wrote:

"Throughout Canada, except on the seacoasts, the Bald Eagle is nothing more than a rare, interesting, and picturesque feature of the landscape. It is greatly to be regretted that it is usually a target for every gun when it comes within range."

Taverner's remarks may be applied to northern Saskatchewan where residents often have bitter feelings against the eagle. Even though Saskatchewan has a law which makes it illegal to kill a Bald Eagle (Anonymous, 1960), many Bald Eagles still fall victim to man each year, either through ignorance or unconcern for this law. I have become convinced that Man is a major predator on the Bald Eagle, as indicated by the following observations.

Predation by Man

The comments and incidents listed below happened in Saskatchewan's northland. Similar incidents take place each year and at a rate which must have a strong effect on the eagle population.

DNR employee: "I take a pot at them when I can get close enough."

Mr. Jim Good, Stony Rapids: "Trappers here kill eagles whenever possible; this is no easy job since they are very wary old birds."

White trapper and partner: "One spring we destroyed three nests and six eggs while trapping muskrat and

beaver. One man I knew would cook and eat the eggs. I usually chop down trees and destroy the eggs or young and shoot the adults. Few old birds are killed because they stay out of gunshot range."

Indian (age 18): "I have chopped down about three nest trees with young eagles while I was with other people. I have never destroyed a nest while alone."

Mrs. J. K. Johnson, Big River - Cree Lake: "An eagle nest at Chartrand Point, called Eagle's Pass at one time, was cut down by the natives. It was a partially dead jack pine or black spruce."

Fishing lodge operator at Cree Lake: "Two fishermen from the States came back to camp one night just seething because they had found a Bald Eagle dead on the shore. Someone had shot the eagle a day or two before."

Resident non-trapper: "I shoot at eagles when I get the chance." He told me that during the summer of 1964 he shot at an eagle but did not kill it.

One trapper told me of a 70-year-old Indian who had killed many eagles in his career as a fishing guide, trapper and fisherman. "The man kills every Bald Eagle and destroys every nest he sees."

Boys, 14 and 16: These boys told me that they had shot at eagles during the summers of 1964 and 1965. In the area where they had shot at the eagles an osprey nest was found. Apparently they were not able to distinguish between these two species.

During 1965, two young eagles were taken from a nest. The tree was chopped down and destroyed. These eagles were hand raised. Later one was found dead in Manitoba (Davis, 1966). The death of this eagle is not surprising since it was hand raised and therefore not properly trained in caring for itself.

Reasons Why the Bald Eagle is Hunted and Destroyed

Trappers and fishermen have various reasons for destroying Bald Eagle nests and shooting the adults. One trapper I talked with is convinced

that the Bald Eagle destroys muskrats. He gave the example of a large muskrat population which, according to the trapper, was destroyed by a pair of Bald Eagles nesting nearby. John Hanson of Cree Lake told me he once saw a Bald Eagle catch a muskrat. Another Cree Lake trapper, Martin Engeman, saw a Bald Eagle harassing a Red Fox which was attempting to cross a frozen lake. A Stony Rapids resident stated: "Trappers hate these eagles due to the fact that they destroy a lot of small furbearers such as mink and muskrat." The bitterness held against the Bald Eagle is probable due to overly emphasized facts and exaggerated or questionable incidents. Some trappers feel the young eaglets are fed a high percentage of furbearers, but examination of nests does not bear this out. There is no question that the eagle will occasionally take valuable furbearers, but it seems doubtful if any great or lasting damage is done to any mammal population. Herrick (1927) and Imler and Kalmbach (1955) report that Bald Eagles may take small mammals. Imler and Kalmbach, however, feel that in most cases they exert little influence on a mammal population. They found that one-eighth or more of the eagles' food was carrion. Schondelmeier (1965) of Jansen, Saskatchewan, reported a Bald Eagle feeding on the carcass of a cow on April 11.

Bald Eagles in Saskatchewan seem to feed primarily on fish and many of these birds are seen hunting along the shorelines. The skeletons of northern pike and suckers were found under a nest tree at Cree Lake (Davis, 1966). Heidelberg (1966) also found fish in a Bald Eagle's nest at Weitzel Lake. Aschim (1965) and B. Richards (pers. comm.) reported eagles catching large fish. W. H. Beck and I visited four nest sites (two sites with young eagles) at Cree Lake in June 1966. One nest contained three half-eaten 10-inch common whitefish. Another nest contained many fish scales. At the base of three nests we found 19 fish bones and three breast bones of birds which were of duck or mergan-

ser size. Five of these 19 bones were those of northern pike. No mammal remains were found.

In Saskatchewan the Bald Eagle probably takes few fish of economic importance. Certainly the dollars and cents value of the Bald Eagle as a tourist attraction and as part of the northern heritage repays many times over the small damage done to fish and mammals.

Unfortunately, many eagles are killed and nests are destroyed by men and boys who are not trappers or fishermen. The killing of an eagle is a status symbol to many northern youths. Also, as more city residents invade the north each summer, youngsters and grownups alike pour into the lake areas with guns and often use them indiscriminately. I have seen muskrats, red squirrels, gray jays, loons, ravens, and spruce grouse shot because they were convenient and challenging targets. Heaslip (1959) also reported that raven and grebes were found shot during the spring near Uranium City. Certainly an eagle would be shot by these same people if the opportunity arose.

In the early winter of 1965 someone shot and killed a Bald Eagle in Michigan. The comments of John Grey (1966), editor of *Michigan Conservation*, could well apply to those people in Saskatchewan who would destroy the Bald Eagle:

"Whoever you are, you killed a Bald Eagle. Few hunters could duplicate what you did . . . because there are just about no Bald Eagles left in Michigan. And their number is diminishing all too fast over the entire continent . . . Whoever you are, whatever you are, certainly you are no sportsman. And mister, no conservationist anywhere speaks in your behalf. Sportsmen and conservationists pity you, whoever you are. They pity you because you miss the indescribable thrill of being in the woods with a gun. The ethic of an age-old sport is obviously not yours to enjoy. You have no appreciation of the true rewards of hunting. Established is the fact that you are a violator. But somehow you are

more or less than that. You killed a Bald Eagle."

Poisoned Bait Sets

Another mortality factor caused indirectly by man results from eagles feeding on poison baits set out for wolf control.

A few years ago, C. L. Ferguson, then a pilot and conservation officer for the D.N.R., sighted six Bald Eagles feeding on poisoned meat placed on lake ice for wolves. The bait was on a lake north of Uranium City near the N.W.T. boundary. "When approached the eagles flew off as if in a drunken stupor." If the eagles were lucky they only became sick. More likely these eagles and others like them fell into the forest and died and were never counted as a casualty of poisoned bait sets. However, at least seven Bald Eagles *have* been found dead at poisoned baits, according to C. L. Ferguson and Bill Richards:

Two juveniles died at a bait set northwest of Besnard Lake. An adult was killed at Nagle Lake and was given to the Saskatchewan Museum of Natural History.

Two adults were found dead at Irving Lake (east of Stanley). One of these eagles was mounted and is now in a private home.

Two immatures were killed by poisoned meat on the west side of Triveet Lake.

Many other animals have been killed at bait sets. Fourteen foxes were counted dead at one set by C. L. Ferguson. At other sets, lynx, mink, wolverine, gray jays, raven, and other animals have been found.

Poisoned bait for wolves (fresh meat treated with strychnine) is set on lake ice well away from the shore. B. Richards and G. Neis state that a few eagles overwinter in the southern part of the coniferous forest. Other eagles return from their southern wintering grounds about March 15. Since Bald Eagles are carrion eaters, they are drawn to the poisoned meat during the winter and early spring when fish are not available. This hazard could be lessened if the pois-

oned bait was burned or buried by March 1, rather than waiting for it to fall through the ice which often does not occur until June 1.

Conclusions and Suggestions for Protecting the Bald Eagle

As a result of talking with residents and from personal observations I must conclude that the Bald Eagle population in Saskatchewan is declining. The first and obvious action which can be taken is to stop the destruction of nests and the killing of nestlings and adults. Later, other steps such as prohibiting motor boats and camping in certain areas might be taken to insure the maintenance of a safe population. Many Bald Eagles now winter on the large waterfowl refuges in the U.S.A. At least 300 Bald Eagles overwinter on the wildlife refuges of Missouri (Dunkeson, 1966). These areas help the eagles safely spend the winter with a minimum of hardships. Thus, the protection of this species during the most critical time, the reproductive period, should pay dividends.

I would also like to stress that no Bald Eagle should be removed from the nest for any purpose. An eagle taken from the nest and raised by hand misses the parental training and care. It certainly would have less fear of man and would be more susceptible to shooting or poisoning.

A very serious factor is that the area of the Bald Eagle's nesting territory is being reduced. Emma Lake, Madge Lake and other small lakes in the southern part of the coniferous forest will probably never again be the site of an eagle's nest. Lac la Ronge, Candle, Wollaston and other lakes are in danger of losing the eagles which nest in these areas. Bald Eagles cannot compete with motorboats, water skiers, and curious on-lookers. As woods are cleared and cabins and lodges built, the eagles are forced to find new nesting sites. Fortunately, Bald Eagles may use the same nest year after year. In areas frequented by many people, safety zones of one-quarter mile radius around the nest could be marked off.

Recently, the Saskatchewan Natural History Society passed a resolution to review the status of the Bald Eagle in northern Saskatchewan. The Department of Natural Resources was asked to undertake an educational program among northern residents and visitors as to the value of the bird and the need for protection. The resolution asked that the present laws be publicized and enforced when necessary (Slimmon, 1966). I have restated parts of this resolution and made some additional suggestions in the following:

1. Begin an educational program to inform northern residents and visitors as to why they should not kill eagles and destroy nests. Inform them of the provincial law protecting this bird. (Almost no one I talked with, including some D.N.R. patrolmen, knew of the existence of this law. Many northern residents still feel that the D.N.R. looks favourably on the shooting of this bird.) Educational pamphlets could be published by the Department of Natural Resources AND The Saskatchewan Natural History Society. Personal contacts with northern residents should be made whenever possible.
2. The law prohibiting the shooting of the Bald Eagle and the disturbance of a Bald Eagle nest should be enforced. Enforcement in the past has been a serious problem. Government ministers have told conservation officers to "go easy" on law enforcement in the north and northern conservation officers have been given little direction about enforcement. One conservation officer told me he often "played it cool" and did nothing because he had not been properly directed. A trapper informed me that a conservation officer caught him shooting an eagle and did nothing. Conservation officers should be given full support by the D.N.R. and other government agencies when enforcing this law. Appropriate steps should be taken against all offenders.
3. Poisoned meat sets for wolves should not be set out before Decem-

ber 1, and should be buried or burned by March 1. The practice of poisoning wolves should be re-examined and poisons should always be used with discrimination.

4. A permit should be required to keep the Bald Eagle in captivity and then only in well-managed public zoos.

Some Observations of Nest Sites and Reproductive Success of the Bald Eagle in Northern Saskatchewan

Some measure of the status of the Bald Eagle in Saskatchewan may be obtained by documenting nest sites, eggs and young. It is hoped that the following unpublished observations, together with records previously published, will provide a basis for future assessment of the Saskatchewan population.

The following items are in geographic order from south to north:

Parrhill Lake — north of Norquay:

(Pers. comm., Dr. Stuart Houston)
 "The nest was found by Bill Horseman in mid-June, 1965. He and I visited the nest June 20; Bill climbed the tree and applied the band. The flat-topped nest was four feet deep and five feet wide. It was constructed of sticks 1" in diameter and was lined with marsh grass. Location: 52°20' N and 102°10' W (in terms of 10' blocks)."

Emma Lake: The following accounts were given to me by Mr. George Neis of Emma Lake. "About 1950, an eagle was seen feeding on a deer that two coyotes had chased and killed out on the ice in front of our house. Between 1955 and 1958, I saw two eagles. One was flying and the other eating on a deer about two miles northwest of here (Neis Beach). About 1955 I saw two Bald Eagles building their nest 50 yards from the shore of Emma Lake. The nest was located 60 feet up in a large white poplar across the bay north from Dr. McPhail's cabin. It must have been April since the snow was beginning to melt. I would say that the Bald Eagles stay here the year around."

"On May 12, 1961 I spotted a lone adult Bald Eagle on the shore near Munson's Bay. A large nest 40 feet up in a white spruce was found nearby.

The nest was approximately 30 yards from the lake edge. The eagle was seen in this area several times that spring, but it was always alone and no activity at the nest was noted."

Big River: (Pers. comm. Mrs. J. K. Johnson, Big River). About 15 years ago Mrs. Johnson's son, George, found an eagle's nest about three and one-half miles from Big River. She did not know if the nest was still in use.

Candle Lake: On July 9, 1958 Elmer L. Fox of Regina found an eagle's nest 40 feet up in the top of a black spruce on Spider Island. One well-feathered young was in the nest (Prairie Nest Records Scheme).

Whiteswan Lakes: On July 12, 1959 a nest tree was found blown down and one young in the nest was killed. On the same day an eagle was seen at another nest (P.N.R.S.).

Cumberland House: R. Mackay of La Ronge told me that in recent years a nest had been along the river by the Birch River Settlement. Eagles were often seen flying near Macdonald's Bay on Lake Namew although no nests were found.

Prince Albert National Park: On June 25, 1958 A. M. Pearson found a nest with one young on the Kingsmere River. The nest was located 35 feet above the ground and was made of sticks, grass, and reeds (P.N.R.S.)
 "There was a nest at the Narrows, Waskesiu Lake, near the start of the portage to Kingsmere Lake. The nest was 50 feet up in a Black Poplar. Two young were raised this year (1965)." (Dr. Stuart Houston.)

There were two well-feathered young in this same nest on August 8, 1966. By August 13 one young had left the nest (Stanley Shadick, Saskatoon).

Amisk Lake: On July 11, 1959 Elmer L. Fox observed a Bald Eagle sitting on a nest located on an island in Amisk Lake (P.N.R.S.).

Lac la Ronge: Burns (1961) reported seven family sites on Lac la Ronge in 1961 as compared to four in 1960. Bill Richards says there are now probably three pairs nesting on Lac la Ronge.

Little Deer Lake: G. Koshinsky of La Ronge found an eagle's nest on the largest island in Little Deer Lake



Photo by C. J. Henry, courtesy U.S.D.I.

Bald Eagle, Seney Refuge, Germfask, Michigan

(33 miles north of La Ronge). The nest is located 25 to 30 feet up in a spruce. It has been occupied since 1962.

Otter Rapids: A recently occupied nest was observed in early July, 1965 on the face of a cliff about 30 feet above the water on a small river 8½ miles ENE of Otter Rapids (55°40' N, 104°30'W), reported by Dr. Johnston of Prince Albert. When visited by Doug Whitfield and Jonathan Gerrard on July 1, 1966 there were no signs of occupancy.

Alongside Highway #2, which was still under construction and not open to general traffic, was another nest, three miles north of Otter Rapids (55°42'N, 104°38'W). This nest was 40 feet up in a live poplar tree and was evidently deserted when visited by Jonathan Gerrard and Doug Whitfield on July 4, 1966. A construction worker reported that it had been occupied until three weeks previously and he was not aware what had happened to the birds. The tree was so close to the right-of-way that it had been scraped by the construction machinery.

Sulphide Lake: Vern Studer of La Ronge told Gerrard and Whitfield that Bald Eagles had nested on the lake (55°22'N, 104°52'W) for many years and he thought they were there again in 1966. The nest is in a tall poplar tree.

Hickson Lake: Professors E. M. Nanson and H. P. Kent of Saskatoon located a nest on an island in the lake (56°20'N, 104°22'W) on July 6, 1966. The nest was on the top of a 30-foot dead stub and contained two feathered young.

Besnard, Sucker, and Head Lakes: About 1958, Folke Lindsgog showed Conservation Officer C. L. Ferguson the location of six nests on Sucker Lake. The eagles began to disappear until there may not be any nests on Sucker Lake at this time. Occasionally an eagle is seen and Conservation Officer Bill Richards of La Ronge feels there may be two or three nests there and along the river. One man at Sucker Lake raised eagles and kept the juveniles chained. He felt they probably came back the following spring. C. L. Ferguson has seen eagles in the Besnard, Head, and

Sucker Lake region as early as mid-March.

Pinehouse Lake: During the early 1960's a pair of Bald Eagles nested for three years at a small lake east of Pinehouse.

Ile à la Crosse: "An old telegraph tower served as a support for a nest for a number of years. It fell down about 1961" (C. L. Ferguson). A few years ago a mink rancher raised an eagle and kept it in a cage.

Churchill River: C. L. Ferguson told me they were quite common in this area in 1964. (Pers. comm. Dr. Stuart Houston): "Dr. Bob Cram took a party of boy scouts from Ile à la Crosse down the Churchill River to La Ronge, via Nemeiben Lake. The trip lasted six days, from July 25 to July 31, 1965. The party did not see a single eagle. In earlier years, Cram sighted about two per day on the river."

Clear Lake: (North end of Churchill Lake where it connects with Frobisher Lake) Ted Pedersen, a D.N.R. patrolman, said Bald Eagles were once common on "Eagle Island". The eagles stopped nesting there about 1958 or 1959. Pedersen feels the eagles were driven away by shooting and harassment by the people at Clear Lake Village. Occasionally, an eagle is still seen at the lake.

Careen Lake: Mr. George Nelson of Saskatoon, a trapper at Black Birch Lake for many years, told me that a pair of eagles nested for several years on the shelf of a cliff along the Clearwater River one mile from the Black Birch River mouth. They were still there about 1960. He has seen a nest or two on Careen Lake and said the tourist fishermen always enjoyed going by the eagle's nest. George did not see any eagle's nest on Black Birch Lake, although he did observe some adults.

Reindeer Lake: A few years ago the owner of a tourist fishing camp kept Bald Eagles as a tourist attraction.

Cree Lake: Eagles at Cree Lake have been reported by Lahrman (1964) and Davis (1966). W. H. Beck and I visited this area again from June 16-27, 1966:

June (2nd week): Some members of the staff at the Cree Lake Fishing Lodge found a dead Bald Eagle on the shores of MacIntyre Lake.

June 24: Two nests at the southeast side of Lazy Edward Bay built in 1965 and never used (Davis, 1966) were still vacant. Feathers and droppings indicated that they frequently had perched nearby. An adult Bald Eagle was seen at the far end of the small lake.

June 25: Beck and I travelled to Morison Island where eagles had successfully raised a pair of young in 1965 (Davis, 1966). A new nest had been built about 60 yards away. The nest, located 30 feet up in a living hollow jack pine, contained two large down-covered young. The two eaglets were banded.

June 26: During the spring of 1966 a pair of Bald Eagles built a new nest on the northwest side of Middleton Island a few yards from Rushmer Channel. The nest was 25 feet up in a hollow living jack pine. (Two partially feathered eaglets were banded). A hole was found in the trunk and young birds, probably flickers, were heard inside.

Engemann Lake: Trapper John Hanson told me there were several nests along some of the rivers running into Engemann Lake.

Wollaston Lake: R. Lein and R. Sanderson in 1964 found only one nest on the lake and it had been chopped down. Apparently the Indians chop down every nest tree they see (Nero, 1966).

Hatchet Lake: In September, 1964, some sportsmen took a fishing trip to Hatchet Lake, Saskatchewan. The sight of a family of Bald Eagles nesting within view of the fishing camp was one of the highlights of their trip (Ellis, 1965).

Lake Athabasca area: Nero (1963) listed the Bald Eagle as a common summer resident. Nero was in the area again on June 30, 1963 and saw three birds on nests. These new nests were located four miles west of Engler Lake, four miles southeast of Fir Island in Black Lake, and at the mouth of the Otherside River, Lake

Athabasca. F. A. Heidelbauer had an active nest on an island in Riou Lake in 1963 (P.N.R.S.).

In 1964, F. A. Heidelbauer (pers. corres. to R. W. Nero) reported "eight active Bald Eagle nests were observed in the Richards-Engler-Riou Lake chain, southwest of Stony Rapids."

On July 15, 1964, M. Ross Lein and Gary G. Anweiler located an active nest on a cliff along the Porcupine River below Grove Lake (about 59° 20'N, 104°30'W) (Nero, MS).

Mr. Jim Good of Stony Rapids sent this information to me:

"I have seen the same pair nest for several years down at the harbour on the north shore of the Fond du Lac River about twelve miles west of Stony Rapids. At first the nest was in a dead jack pine snag but eventually the snag fell down and they nested for a couple of years on a ledge of rock in the same area. I did not see the nest occupied during the summer of 1965, but I saw an adult flying in the area, so perhaps they moved their nest somewhere nearby. I am advised that they prefer sandy areas or where sand is readily available and avoid solid rock areas. There seems to be few eagles north of Stony Rapids. They stay quite late in the fall and are occasionally caught in traps during November. When cold weather comes they fly south and return again in May. One trapper near here observed six families along a 25-mile stretch of a river. I believe there is a nest near Pine Channel."

Nests and Number of Young

Nests—In Saskatchewan Bald Eagles nest in jack pine more often than in any other tree. Of 30 recorded nests, 12 were in jack pine, five in white spruce, two in black spruce, one in a spruce (sp.), three on cliff ledges, two in poplar (sp.), and one in each of black poplar and white poplar, white birch, dead stub, and on a telegraph pole. The eagles also nest more often in live rather than dead trees, though this doesn't necessarily suggest living trees are sought out since there are fewer dead trees. Living trees would offer more protection from the

weather, however. Seven of the 12 nests in jack pine were in living trees, three were in dead trees, and no information is available for the other two trees. The average height of 20 nest trees was 31.9 feet. Bald Eagles nest near water. The mean distance from water of 12 nest trees from Athabasca (Nero, 1963) and Cree Lake (present study) was about 35 yards, ranging from three to 133 yards.

Number of Young—Bent (1937) wrote that two or three eagles are hatched, but three are seldom raised and often only one grows to maturity. Twenty-one nests observed in northern Saskatchewan had a total of 35 young or an average of 1.67 eaglets per nest.

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MAURICE G. STREET

(Continued from page 159)

gave up bird banding and amassed a collection of excellent kodachrome slides of the local birds and flowers, taking increasing interest in the latter. In two years, he collected virtually every species of butterfly to be expected in his area. He did not complain, and even on the day of his death his companions were not aware of the increasing severity of his anginal pain.

Should one even try to summarize his lifetime of careful observations? His total of 143 breeding species for a single area may be a world's record, as virtually a one-man effort, and each of these species he knew intimately. He banded over 13,000 birds of 101 species, and some years banded more Tennessee Warblers than all the other banders on the continent together. His habits of careful observation and accurate recording are an

outstanding example of the contribution that an amateur can yet make to science.

Yet few people in Nipawin knew of his deep interests and knowledge. They knew him as a cheerful quiet listener who spoke ill of no one. Some may even have been mystified by the tiny white spruce on his coffin. Close inspection showed a Chipping Sparrow nest in it. This had been selected with infinite care by two very close friends who searched their old haunts a whole afternoon to find just the right specimen. Above all, Maurice liked a little white spruce.

He is survived by his brother Stan and sister, Mrs. Iris Dunlop, both of Victoria, B.C., and by two daughters, Mrs. Victor West and Mrs. Gordon A. Brown, both of Thompson, Manitoba, and three grandchildren.—*C. Stuart Houston*, 863 University Drive, Saskatoon.

THE NATURE CONSERVANCY OF CANADA

The Nature Conservancy of Canada is dedicated to the preservation of our heritage of wild nature. The Conservancy, with this objective in view, has acquired a list of natural areas across Canada which in many instances are still in their original primeval state.

The Nature Conservancy of Canada is endeavouring to organize support for the preservation of these areas wherever this may be accomplished. Already it has been responsible for the delay in sub-dividing the Rattray marsh near Toronto. It has purchased an original stand of cedar in the Bruce peninsula. It is negotiating support for the preservation of one other original stand of pine near Lake Huron, and is negotiating the protection of a marsh and wild wood complex near Kitchener.

The Nature Conservancy of Canada was founded in 1963: Conservancies already existed in England and the

United States. Nature lovers of the United States are familiar with the extensive number of nature preserves implemented by the Nature Conservancy of that country.

In Canada, exploitation and the force of population is rapidly depleting the still untouched wild areas of the country. For the present and future generations we need to preserve adequate examples of these living museums as a link with our past.

How can people help in this work? By writing the Conservancy, advising it of some choice natural site which should be preserved; by getting people together in support of the site; by getting people to help finance the purchase of the site, and finally by donating funds to the Conservancy for the continuation of its work.—*Charles Sauriol*, 22 Hillside Drive S., Toronto 6.

F. C. GILCHRIST'S DIARY — FORT QU'APPELLE 1883 - 1896

by **Mary** and **C. Stuart Houston**, 863 University Drive, Saskatoon

Few items in the Saskatchewan Archives contain more of interest to the naturalist than the 496-page type-written copy of the diary of F. C. Gilchrist. Gilchrist homesteaded in 1883 on the southwest quarter of 12-23-15W2, 10 miles north of Pasqua Lake (formerly Qu'Appelle Lake), on the site of the present railway between Dysart and Cupar. During the Riel Rebellion of 1885 he moved his family into Fort Qu'Appelle and in 1886 took up residence at the base of B-Say-Tah point, 3½ miles west of Fort Qu'Appelle on the south shore of Echo Lake. His diary notes that he could skate to Fort Qu'Appelle on the winter ice in 11 minutes.

The diary began November 1, 1883 and continued until March 13, 1896, one week before he died of pneumonia at his home at the relatively early age of 36 years. He was a contemporary of George F. Guernsey (see: "Saskatchewan's First Resident Bird-Watcher", *Blue Jay* 16:52-54, June 1958) who was at times his shooting partner and at other times his political opponent.

In 1884 Gilchrist was appointed fisheries overseer of the Qu'Appelle Lakes and tributaries. In May 1891 he was appointed Inspector of Fisheries for the Northwest Territories and continued in this position until his death. He visited Crooked Lake and Round Lake in October 1889 and Last Mountain Lake in July and November 1890. In July 1891 a three-week trip took him to Edmonton, Battleford and Fort Carlton (then deserted), thence by canoe to Prince Albert and to Regina and Troy (now Qu'Appelle) by train. In June 1894 he travelled down the Saskatchewan by canoe, visiting Fort a la Corne, Nipawin and Cumberland House; on June 26, 1894 he met J. B. Tyrrell of the Canadian Geological Survey at Chemawawin. He published an interesting article on "The Tullibee" in

Forest and Stream of April 7, 1892, in addition to an article on "Sawdust in Ontario Streams" in the same publication in early 1890.

As a youth, in Port Hope, Ontario, Gilchrist had done some taxidermy. When the 20-member party of the British Association visited Fort Qu'Appelle on August 13, 1884, Sir Bedford Pim's son asked Gilchrist to collect some bird skins for him. He attempted to mount a pelican for the reception of Sir Hector Langevin on August 25, 1884 but found this was not possible with the materials at hand. He mentions mounting an owl, two blackbirds, a Yellow-headed Blackbird and three gulls in 1884-85. Some of the fish he mounted were on display in the Fisheries Department in Ottawa. Twice his diary mentions letters written to the Smithsonian Institution.

Many of his diary entries deal with duck shooting. His most successful days were as follows: November 2, 1887: "54 ducks, almost all bluebills"; October 27, 1889: "53 ducks, principally bluebills and mallards"; November 7, 1889: "Killed about 50 ducks this a.m."; November 14, 1890: "Jack killed 45 bluebills and I killed 17." October 29, 1892: "Got 47 good ducks".

This was before the days of game laws and some shooting was done in the spring. For example, the entry of May 14, 1890 reads: "Killed 13 bluebills, 7 redheads and 1 canvas-back. Could have killed many more bluebills but did not want them." He killed 27 additional ducks that month.

Over the years, two yellowlegs, four Golden Plover, one American Avocet, two Sandhill Cranes and 17 unidentified plover figured in the bag. He did little upland game shooting. Sharp-tailed Grouse ("prairie chicken") were scarce in the winter of 1885-86 and on February 15, 1886 he remarked that he had "seen but five."

Their numbers improved and on July 25, 1889, he saw about 40. His largest bag of Sharp-tailed Grouse was 10 shot on November 30, 1892. Many years he shot only a single Sharp-tailed Grouse, in either November or December. Over the years he mentioned shooting only seven geese.

There is an interesting note from "Muskago Lake", his name for the marshy western end of Pasqua Lake, dated June 16, 1889: "A much greater number of ducks than usual are breeding here and the Indians are murdering them all day. They wade around and kill the young with sticks and the old with shot."

Birds mentioned in the diary include 44 species. Some interesting entries, chiefly spring arrival dates and fall departure dates, are as follows:

WHITE PELICAN: "April 15, 1889. 66 pelicans passed over this evening; I never saw them come so early before." "April 15, 1895. 15 pelicans came."

DOUBLE-CRESTED CORMORANT: "April 24, 1889. Saw a number of cormorants."

WHISTLING SWAN: Late fall dates of Nov. 4, 1890, and Nov. 15, 1894.

CANADA GOOSE: Spring dates of April 5, 1885 and April 4, 1895.

MALLARD: Spring dates of April 5, 1885; April 11, 1886; April 9, 1887; April 15, 1889; March 30, 1895. Late fall shooting, November 15, 1889.

GADWALL AND AMERICAN WIDGEON: Marked southward migration of these two species noted October 13, 1891.

PINTAIL: Spring date of April 1, 1895.

REDHEAD AND CANVASBACK: Late fall shooting, October 15, 1889.

LESSER SCAUP: Spring date of April 5, 1895. Late fall shooting on November 22, 1887, and November 21 in 1889 and 1890.

BUFFLEHEAD: Late fall shooting, October 28, 1886.

RUDDY DUCK: Late fall shooting, October 28, 1886.

MARSH HAWK: Spring dates of March 30, 1886; April 10, 1889; April 15, 1895.

SPARROW HAWK: Spring arrival, April 8, 1889.

SANDHILL CRANE: "Sept. 19, 1885. There is a flock of Sandhill Cranes on my stubble all the time; when one flock goes, another comes." "Sept. 21, 1885: Shot 2 Sandhills with shotgun."

AMERICAN COOT: Late fall shooting, November 11, 1889.

KILLDEER: Spring dates of April 18, 1887; April 7, 1890; April 13, 1895.

YELLOWLEGS (species?): Spring dates April 16, 1884 and April 14, 1887.

AMERICAN AVOCET: "May 4, 1889: Shot an avocet".

BONAPARTE'S GULL: "June 4, 1885: I have put up three Bonaparte's gulls." (It is possible that these were Franklin's Gulls — CSH).

SNOWY OWL: One mentioned as seen February 14, 1884.

BANK SWALLOW: Spring dates of May 7, 1885 and April 22, 1889.

COMMON CROW: Spring dates of April 3, 1884 ("plenty"); April 4, 1885 (18); March 30, 1886 (2); April 2, 1887 (some on lake ice); April 6, 1888 (heard); April 3, 1890; March 31, 1893 (a number); March 29, 1895.

ROBIN: Spring dates of April 16, 1886; April 18, 1887 (a large number); April 14, 1889 (a number); April 7, 1890; April 19, 1892 (in great plenty); April 12, 1895.

WESTERN MEADOWLARK: Spring dates of April 16, 1884; April 10, 1885; April 13, 1886; April 7, 1890.

BALTIMORE ORIOLE: Spring date of May 16, 1895.

COMMON GRACKLE: Spring date of April 9, 1895.

TREE SPARROW: Migration dates for "Chipping Sparrows" likely are referable to this species. April 10, 1885; April 3, 1887; April 2, 1890; March 24, 1892; March 27, 1895.

SONG SPARROW: Spring dates of April 2, 1884; April 8, 1885; April 18, 1887; April 7, 1895.

We wish to thank D. H. Bocking of the Saskatchewan Archives Office, University of Saskatchewan, for his assistance, and Mrs. Maude Adams of Victoria, B.C., for additional information.

ADJOINING UNUSUAL NEST SITES OF SNOW GOOSE AND PEREGRINE FALCON

by **E. Kuyt**, Canadian Wildlife Service, Fort Smith, N.W.T.

Spencer G. Sealy has reported the interspecific nesting of four species of Arctic birds observed along the Perry River in the Northwest Territories in 1965 (*Blue Jay*, 23:168-169). A Peregrine Falcon, Canada Goose, Rough-legged Hawk and Water Pipit all nested on the same outcropping within 300 yards of each other. The purpose of this note is to relate a somewhat similar association.

I spent the period between July 6 and July 10, 1966 along parts of the Thelon River, N.W.T., engaged in making certain collections for use in a Peregrine Falcon study. One of the Peregrine nest sites is well known to field workers who have visited the Aberdeen Lake area. Local Eskimos have indicated that the nest site has been occupied for as long as they can remember. The nest site is merely a low sand hill with scattered boulders, the whole undoubtedly pushed up in earlier years by the action of moving ice. The nest is a depression in the sand amongst boulders and coarse leaves of Lyme-grass (*Elymus arenarius*). The nest is accessible to any animal wishing to walk up to it. On July 8, 1966 the falcon's nest contained three eggs. Eggs in this nest in previous years were hatching on July 16, 1963 and on July 11, 1964, so it is reasonable to assume that hatching was imminent during our visit in 1966. The nest was not visited by me in 1965 but I think nesting took place as just below the nest we found a cracked, bleached Peregrine egg, devoid of contents. We presumed the egg had rolled from the nest the previous year.

Somewhat earlier, while circling over the falcon's nest before selecting a landing site for our float-equipped aircraft, we spotted a pair of Snow Geese resting on the same "ice-push". Upon walking to the falcon's nest, we were somewhat startled to find that the Snow Geese had their nest in the

same place as the Peregrine Falcons. The two nests were only 25 yards apart but boulders along the ridge of the "ice-push" prevented the setting birds from seeing each other. The nest of the Snow Geese contained four downy young, one of which had just emerged from the still-present egg shell. One cracked egg showing no sign of having been incubated was lodged against a stone about five feet below the nest on the slope facing the lake.

No doubt due to the recent hatching of the goslings, the parent geese were extremely reluctant to leave the area, preferring instead to coax the goslings to walk to the lake. That brought the adult geese close to the nest of the Peregrines and subjected them to immediate and violent attacks by both falcons. The falcons stooped not only at the geese but also at the human intruders. On one occasion a Snow Goose took to the air and that spurred the falcons on to redouble their efforts. The goose barely managed to stay airborne as far as the lake's edge. At that point a particularly vicious stoop by the female falcon caused the goose to hit the water with a resounding splash. Three of the goslings finally joined the parents in the water. The fourth gosling, which was not yet dry, was placed near the parents at the water's edge. Although the falcons paid no attention to it, that gosling's chances of survival appeared slim.

Snow Geese are generally colonizers and the only colony known to me in the area—a group of perhaps 30 or 40 pairs of Lesser Snow Geese (*Chen h. hyerborea*)—is located about 10 miles away near the western end of Aberdeen Lake. Peregrine Falcons and Snow Geese differ widely in their nesting requirements and it is remarkable that in this case the two species were nesting in such close proximity.

BIRD MORTALITY AT RADIO AND TV TOWERS NEAR WINNIPEG, SEPTEMBER 1965

by **Lawrie B. Smith**, 335 Haney St., Winnipeg 20, Manitoba

Reports of bird mortality at radio and television towers in this region have been increasing since 1950 (Belcher, *et al*, 1966; Gollop, 1965; Lahrman, 1959, 1962, 1965; Nero, 1961, 1962; Velie, 1963); as more of these structures are being built each year it seems important to record observations on such collisions in order to learn what effect this has on bird populations. At the same time valuable information will be obtained on bird migration since the largest kills take place during the migration season, especially in the fall. These observations may also be useful in learning how to reduce the hazard posed to birds by these towers.

The tallest towers of this type in the Winnipeg, Manitoba area and their dates of erection are: CJAY TV tower at Ste. Agathe, about 23 miles south of Winnipeg, 1960; CFMW FM radio tower at St. Norbert, about six miles south of Winnipeg, 1964; CBWT TV tower at Starbuck, about 10 miles west of Winnipeg, 1965. The only published report of bird mortality at any of these towers to date is by Hosford (1962), who records 67 individuals of 25 species found on September 24, 1962 at CJAY TV tower. They were presumed to have collided with the tower and its supporting guy wires the previous night.

On three occasions in the latter part of September, 1965 similar kills were observed in the Winnipeg area. The results are of interest as they represent some of the largest kills reported to date for Manitoba and Saskatchewan as well. Since the three kills occurred within a week of each other it was also of interest to notice the change in species composition of the kills.

On the evening of September 22/23, migrating thrushes and warblers were heard passing over Winnipeg while a light drizzle was falling. On September 23, David Hatch, Bill Adams and

myself visited the towers at Ste. Agathe, St. Norbert, and Starbuck. We arrived at the CJAY tower at 11:00 a.m. and finished at the CBWT tower at 5:30 p.m., having spent approximately one hour and 40 minutes at each of the TV towers and approximately 30 minutes at each of the radio towers. The area for 50 yards around CJAY tower was second growth hay and scattered clumps of alfalfa with a field of oats on the south side and a field of swathed wheat on the north side; the four towers at CKY were in a line running north and south and had tall weeds immediately under them, swathed wheat on the east side and second growth hay on the west side; the CFMW tower had stubble on the west and north sides, a gravel parking lot on the south side and the lawns of the transmitter building on the east side; the area surrounding the CBWT tower was fallow in ridges 10 inches high left by ducktooth harrows.

At the end of the day we had collected 184 dead or injured birds of 35 species (Table 1). The number of birds found decreased as the height of the tower became less. This supports previous observations that the largest kills occur at towers 500 feet high and over (Janssen, 1963). Most of the birds were found on the south or east side of the towers or near the supporting cables on the north side.

On September 29 I received a message from Don Dennix, the maintenance engineer at CJAY TV, that there had been a substantial kill of birds at the tower sometime between his visit on the morning of September 27 and the morning of September 29. Dr. Ralph Bird and I arrived at the tower at about 1:30 p.m. and spent one hour picking up dead birds before a steadily increasing drizzle forced us to stop. Dennis had collected about 30 birds around the building. Most of the birds we found were within 50 yards of the

south and east sides of the tower near the northwest set of supporting cables. Although Dennis could not say on which night the birds had been killed, it seemed from their relatively fresh appearance and the absence of predation on corpses that they had been killed on the evening of September 28/29. A summary of the birds we found is given in Table 2.

On the morning of October 1, I received a second call from Dennis to say that there had been another kill at the CJAY TV tower. I arrived at the tower at approximately noon and spent 1½ hours collecting dead birds, mostly south and east of the tower and a few on the southwest side. Again, Dennis had already collected about 30 specimens around the building. On this date many of the birds were partly eaten or there was only a mass of feathers on the ground where the body had been, suggesting that the kill had taken place on the evening of September 29/30 rather than the evening of September 30/October 1. Dennis had not been to the tower between the morning of September 29 and the morning of October 1 and therefore, could not say on which night the kill had occurred. Although the ground had been searched fairly thoroughly in the first two visits to the CJAY tower, time did not permit such a thorough search on October 1 and perhaps as many, or more, were not found. Thus, the kill on that date was by far the largest of the three recorded at that tower in 1965 (see Table 2).

Since weather conditions seem to be an important factor in these kills, it would be pertinent to record such details as the passage of cold fronts as indicated by temperature changes and wind shifts, as well as cloud conditions and duration of precipitation, if any, on the night of a kill. Accordingly, the following weather data have been taken from the monthly summary of records made by the Meteorological Branch of the Department of Transport of Canada at the Winnipeg International Airport.

September 22 was cool and cloudy all day, the highest temperature being

55° F.; it dropped from 55° F. at 3:00 p.m. to 47° F. at 4:00 p.m.; the lowest temperature during the night, 43° F., lasted from 4 until 6:00 a.m. on September 23. The wind changed from SE 6 at 9:00 a.m. to N 16 at 2:00 p.m., decreased to N 8 by midnight and then increased to NW 13 by 8:00 a.m. on September 23. There were light showers in the afternoon and evening that amounted to 0.27 inches of rainfall. On September 28 it remained cool with a high of 46° F. at noon; the temperature dropped from 41 to 35° F. between 8:00 and 9:00 p.m., was 32° F. from midnight to 1:00 a.m. and then rose steadily to 42° F. by 8:00 a.m. The winds were N 4-6 m.p.h. in the afternoon and became lighter after midnight. There was no precipitation. The weather remained cool and cloudy all day on September 29th, the high being 45° F. at noon. The temperature gradually dropped during the night until a drop from 38 to 33° F. occurred between 3:00 and 4:00 a.m. on September 30. The winds were N 10 in the middle of the day on September 29 and gradually decreased to N 8 at 8:00 p.m. and then changed to NW 6; this was maintained until 8:00 a.m. on September 30 when the wind strengthened until it reached NW 20 at 3:00 p.m. From 1:00 p.m. September 29 until 1:28 a.m. September 30 a total of 0.29 inches of rain fell.

The weather throughout September had been generally cool and wet, in fact, it was the coolest September on record at Winnipeg. The cool, wet weather began in the last week of August and was steady enough to halt harvesting operations in the area until October. Rainfall for September was above normal and sunshine was below normal. Record low temperatures were experienced for two dates during the month, 19.8° F. on the 25th and 18.9° F. on the 26th.

The wet weather during the month may have delayed the migration of many birds until they were forced to migrate by the strong cold front that began to move southward on September 21 and led to the very low temperature recorded on the 25th and

26th. The birds that were killed on the night of September 29 may have begun their flight under dry conditions but ran into precipitation where the cold air met the advancing warm air moving in from the south. It has been suggested that once birds begin migrating they are unable to stop if they run into unfavourable weather conditions (Williams, 1950).

The interesting feature about these kills is the change in species composition as the season advanced. The first kill was composed predominantly of warblers and sparrows that are normally found in large numbers around Sparrow and Swamp Sparrow are all the first week in September in Win-

nipeg during fall migration. For example, Tennessee Warbler, Ovenbird, Yellowthroat, American Redstart, Savannah Sparrow, Lincoln's thought to leave Manitoba between mid-August and mid-September. The species composition in the second kill did not differ greatly from the first except for the absence of Red-eyed Vireo, Philadelphia Vireo, American Redstart or Savannah Sparrow, although there were great numbers of Myrtle and Orange-crowned warblers. The greatest difference was between the kill on September 28 and the kill on September 29; the number of Swainson's Thrush and Gray-cheeked Thrush increased greatly, and two

TABLE 1
Dead birds found September 23, 1965 at TV and Radio towers near
Winnipeg, Manitoba

SPECIES	TV TOWERS		RADIO TOWERS		SPECIES	TV TOWERS		RADIO TOWERS	
	CJAY Ste. Agathe 1003 feet	CBWT Starbuck 1016 feet	CFMW St. Norbert 855 feet	CKY Ste. Agathe 320 feet		CJAY Ste. Agathe 1003 feet	CBWT Starbuck 1016 feet	CFMW St. Norbert 855 feet	CKY Ste. Agathe 320 feet
Yellow-bellied					Palm Warbler	3	5	1	..
Sapsucker .....	..	1	..	..	Ovenbird	9	3	1	..
Long-billed Marsh					Northern Water-				
Wren .....	..	..	..	1	thrush .....	..	1	..	..
Short-billed Marsh					Mourning Warbler....	..	2	..	..
Wren .....	..	1	..	..	Yellowthroat	3	4	2	..
Catbird	1	..	..	..	American Redstart ..	4	3	2	..
Swainson's Thrush ..	4	..	..	..	Savannah Sparrow ..	2	4	1	..
Gray-cheeked Thrush	1	..	1	..	Baird's Sparrow .....	..	..	1	..
Solitary Vireo .....	..	1	..	..	Sharp-tailed				
Red-eyed Vireo	2	2	1	1	Sparrow	2	1	..	..
Philadelphia Vireo ...	1	1	..	..	Clay-colored				
Black-and-White					Sparrow	1	..	..	..
Warbler .....	..	1	1	..	Harris' Sparrow	2	3	..	..
Tennessee Warbler ..	5	8	1	1	White-crowned				
Orange-crowned					Sparrow .....	..	1	..	..
Warbler .....	..	1	2	..	White-throated				
Yellow Warbler .....	..	4	1	..	Sparrow	12	3	..	2
Magnolia Warbler....	..	1	..	..	Lincoln's Sparrow....	9	4	4	..
Cape May Warbler ..	1	1	..	..	Swamp Sparrow	6	9	1	..
Myrtle Warbler	1	2	..	..	Lapland Longspur....	..	2	..	..
Chestnut-sided									
Warbler	1	1	..	..	Total	77	77	24	5
Bay-breasted									
Warbler	3	2	2	..					
Blackpoll Warbler....	4	5	1	..	35 species; 184 individuals				

species known to migrate normally at that time of year, Hermit Thrush and Slate-colored Junco, were found in the collections for the first time. The peak of the thrush migration through southern Manitoba is thought to occur in the first ten days of September but it now appears that large numbers are present until the third week, or even the end of September.

In 1962 three species were found that were not found in 1965 — Wood Pewee, Nashville Warbler and Canada Warbler, whereas eight species were found in 1965 that were not found in 1962 — Catbird, Philadelphia Vireo, Cape May Warbler, Chestnut-sided Warbler, Sharp-tailed Sparrow, Clay-colored Sparrow, Harris' Sparrow and Lincoln's Sparrow. While it is difficult to compare the kills in the two years, it may be worth noting that the most numerous species found in 1962 were the Myrtle Warbler (13) and the Blackpoll Warbler (8). These species were not numerous in the first kill recorded in 1965, but were more numerous in the second and third kills. This suggests that the fall migration through southern Manitoba was somewhat later in 1965 than in 1962.

It would be interesting to compare the kills recorded at Winnipeg with kills recorded in neighboring regions such as Saskatchewan and Minnesota, but since many more kills have been documented from these regions than from the Winnipeg area to date, it does not seem that a detailed comparison of the numbers and species is warranted at this time. Still, from the information now available it does seem that the large kills recorded at TV towers in Saskatchewan occur earlier in the fall migration than those recorded near Winnipeg. The recorded kills containing more than 50 individuals in Saskatchewan have occurred August 20/21, 1964 (Gollop, 1965; Lahrman, 1965), September 2/3, 1962 (Nero, 1961), September 3/4, 1964 (Gollop, 1965; Lahrman, 1965), September 7, 1962 (Lahrman, 1962), September 9/10 (Nero, 1961). The kills recorded in the Winnipeg area have occurred towards the end

of September, the time of year that some large kills have been recorded in Minnesota (Feehan, 1963; Green, 1963; Janssen, 1963; Peterson, 1963), and in Wisconsin (Kemper, 1959). It would be very interesting in the future to be able to compare the kills recorded in many different places dur-

TABLE 2
Dead birds found September 29, 1965,
and October 1, 1965 at CJAY TV
Tower at Ste. Agathe, Manitoba

SPECIES	SEPT. 29	OCT. 1
Sora	2	1
Common Snipe	1	2
Yellow-bellied		
Sapsucker	2	2
House Wren .....	..	1
Hermit Thrush .....	..	6
Swainson's Thrush ..	1	44
Gray-cheeked Thrush	2	14
Ruby-crowned		
Kinglet .....	..	1
Red-eyed Vireo .....	..	1
Philadelphia Vireo....	..	1
Tennessee Warbler ..	3	5
Orange-crowned		
Warbler	7	3
Magnolia Warbler....	3	..
Myrtle Warbler	9	8
Bay-breasted		
Warbler	5	1
Blackpoll Warbler ..	4	11
Palm Warbler	6	3
Ovenbird	8	2
Northern Water-		
thrush	1	..
Connecticut		
Warbler	4	1
Mourning		
Warbler .....	..	1
Yellowthroat	4	5
American Redstart ..	..	1
Savannah Sparrow ..	..	1
Slate-colored Junco..	..	8
Clay-colored		
Sparrow	2	..
Harris' Sparrow.....	1	..
White-throated		
Sparrow	14	10
Fox Sparrow	1	2
Lincoln's Sparrow....	7	6
Swamp Sparrow	4	5
	—	—
Total	91	146
	—	—

ing the same fall migration to determine whether the pattern of migration of some of the thrushes, vireos, warblers and sparrows is the same as the pattern thought to occur on the basis of visual observations. As Nero (1961) points out, not only do poor weather conditions for migration have to be present to produce a kill at tall towers, but large numbers of birds must be migrating at the same time.

I am very grateful for the assistance of those people mentioned in the report who helped collect and identify the specimens found at the various towers and also to David R. M. Hatch and Harold V. Hosford for providing literature related to this subject.

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SIXTH ANNUAL MAY BIRD CENSUS, REGINA

The concerted efforts of 41 people in six parties resulted in the tallying of 144 species of birds (with an estimated total of 21916 individual birds seen) in Regina's annual May Bird Census, May 15, 1966, in an area constituting a circle of 30-miles diameter around the city of Regina. Apart from the comparative picture of spring migration that this yearly count gives, it is considered by the sponsoring Regina Natural History Society to be worthwhile as a social and educational activity of the club. Any interested members of the Society are invited to participate, and this brings many who can join the party for only part of the day, and some who are relatively inexperienced bird watchers. Many of the latter, after scouring the country for all or part of the long (6:00 a.m. to dusk) day with avid "listers", are able to say that they saw a bird for the first time.

The 1966 spring migration at Regina followed a rather curious pattern: some of the first migrants arrived very early, but an unusually cold April slowed down later movements. A 48-hour snow storm (April 26-27) brought nine inches of snow, and the last five days of the month had freezing temperatures. The delayed migration is reflected in the May count. One conspicuous example is the large number of Harris' Sparrows (251) which have usually reached a peak earlier. The fact that 35 Loggerhead Shrikes were seen (compare 16 on May 15, 1965) also suggests a belated migration, for in most of the Regina area breeding shrikes are not especially common. The rather large total of 10 Sparrow Hawks (compare 1 seen May 15, 1965) may have a similar explanation, although the presence of a pair at a location where they were known to nest in

1965, and the several sightings by the Binnies of a pair near the Provincial Correctional Institution farm, suggest the possibility of several pairs nesting in the Regina area in 1966.

Conspicuous by their absence were the Catbird and Eastern Kingbird, and only *three* Baltimore Orioles were reported. In a normal year, these species would be expected to be more numerous on the May count (compare 1965 totals).

Counts made on the same day by geographically separated areas will help to chart the spring migration in Saskatchewan. This year, for example, the abundance of Rufous-sided Towhees in the Saskatoon area (where many, of course, would remain as residents) eclipses our Regina count of three, but the fact of real interest in mapping their movement is that towhees were common in Regina a few days before this date!

One of the really spectacular sights of the May count in the Regina area is always the migration of Lapland Longspurs. They were seen again this year in thousands by most of the parties, moving restlessly over fields or rising in clouds into the air. Through the Regina plains, these migrant longspurs move in several waves—we always watch for the first large flocks in late March, and they are always to be seen again in great numbers in May. The contrast between the largely-winter plumage of the first males and the full breeding plumage of the last migrants is striking. Meanwhile the resident longspurs have established themselves on territory, so the parties of the May count had the opportunity of seeing great waves of migrant Laplands while also observing male Chestnut-collared and McCowns in flight songs on their breeding grounds.

Species List (figures in brackets to indicate number seen May 15, 1965):

Red-necked Grebe, 1 (2); Horned Grebe, 46 (19); Eared Grebe, 46 (135); Western Grebe, 140 (24); Pied-billed Grebe, 3 (3); Great Blue Heron, 5 (5); Black-crowned Night Heron, 4 (3); Mute Swan, 4 (5); Whistling Swan, 10 (11); Canada Goose, 232 ±15 young (331); Mallard, 408 (293); Gadwall, 80 (71); Pintail, 224 (185); Green-winged Teal, 45 (13); Blue-winged Teal, 280 (157); American Widgeon,

167 (83); Shoveler, 237 (85); Redhead, 14 (53); Ring-necked Duck, 3 (2); Canvasback, 69 (78); Lesser Scaup, 495 (213); Bufflehead, 3 (3); Ruddy Duck, 59 (61); Red-tailed Hawk, 4 (11); Swainson's Hawk, 5 (5); Rough-legged Hawk, 1; Ferruginous Hawk, 2; Marsh Hawk, 9 (23); Sparrow Hawk, 10 (1); Ruffed Grouse, 1 (0); Gray Partridge, 4 (11); Sora, 5 (16); American Coot, 106 (311); Semipalmated Plover, 17 (3); Killdeer, 145 (153); American Golden Plover, 36 (62); Black-bellied Plover, 11 (0); Common Snipe, 3 (0); Upland Plover, 2 (0); Spotted Sandpiper, 14 (19); Willet, 43 (49); Greater Yellowlegs, 1 (1); Lesser Yellowlegs, 83 (12); Pectoral Sandpiper, 135 (137); White-rumped Sandpiper, 2 (0); Baird's Sandpiper, 104 (266); Least Sandpiper, 119 (36); Long-billed Dowitcher, 29 (38); Stilt Sandpiper, 2 (0); Semipalmated Sandpiper, 74 (10); Marbled Godwit, 25 (25); Hudsonian Godwit, 2 (2); Sanderling, 15 (12); American Avocet, 63 (30); Wilson's Phalarope, 67 (43); Northern Phalarope, 2 (0); California Gull, 7 (2); Ring-billed Gull, 106 (78); Franklin's Gull, 10 (24); Common Tern, 74 (81); Black Tern, 60 (375); Rock Dove, 76 (64); Mourning Dove, 60 (126); Great Horned Owl, 5 (10); Burrowing Owl, 2 (0); Boreal Owl, 1 (0); Belted Kingfisher, 6 (7); Yellow-shafted Flicker, 27 (21); Yellow-bellied Sapsucker, 5 (1); Downy Woodpecker, 1 (2); Western Kingbird, 2 (44); Say's Phoebe, 1 (2); Least Flycatcher, 16 (39); Horned Lark, 337 (900); Tree Swallow, 52 (48); Bank Swallow, 2 (29); Rough-winged Swallow, 1 (0); Barn Swallow, 41 (50); Purple Martin, 44 (35); Black-billed Magpie, 29 (55); Common Crow, 204 (193); Black-capped Chickadee, 2 (0); Red-breasted Nuthatch, 21 (0); Brown Creeper, 3 (0); House Wren, 1 (16); Brown Thrasher, 13 (70); Robin, 268 (164); Hermit Thrush, 1 (3); Swainson's Thrush, 158 (53); Gray-cheeked Thrush, 76 (15); Veery, 12 (15); Ruby-crowned Kinglet, 4 (1); Water Pipit, 3 (0); Sprague's Pipit, 2 (5); Loggerhead Shrike, 35 (16); Starling, 43 (28); Solitary Vireo, 1 (0); Philadelphia Vireo, 1 (2); Warbling Vireo, 7 (25); Black-and-white Warbler, 5 (4); Tennessee Warbler, 10 (2); Orange-crowned Warbler, 50 (13); Yellow Warbler, 67 (40); Magnolia Warbler, 2 (1); Myrtle Warbler, 266 (132); Audubon's Warbler, 2 (0); Black-throated Green Warbler, 3 (0); Blackpoll Warbler, 13 (18); Palm Warbler, 7 (5); Ovenbird, 4 (8); Northern Waterthrush, 13 (50); Connecticut Warbler, 1 (0); Yellowthroat, 1 (1); Wilson's Warbler, 2 (0); American Redstart, 2 (0); House Sparrow, 510+(1000+); Western Meadowlark, 358 (307); Yellow-headed Blackbird, 47 (227); Redwinged Blackbird, 1086+(1077); Baltimore Oriole, 3 (29); Brewer's Blackbird, 469 (442); Common Grackle, 167 (118); Brown-headed Cowbird, 169 (146); Rose-breasted Grosbeak, 10 (13); Purple Finch, 11 (1); Rufous-sided Towhee, 3 (9); Lark Bunting, 4 (13); Savannah Sparrow, 48 (79); Baird's Sparrow, 1 (1); Vesper Sparrow, 60 (53); Lark Sparrow, 2 (2); Slate-colored Junco, 8 (2); Chipping Sparrow, 141 (542); Clay-colored Sparrow, 148 (485); Harris' Sparrow, 251 (33); White-crowned Sparrow, 204 (92); Golden-crowned Sparrow, 1 (0); White-throated Sparrow, 114 (142); Lincoln's Sparrow, 34 (47); Song Sparrow, 27 (35); McCown's Longspur, 248+(46); Lapland Longspur, 11744+(10,000±); Chestnut-collared Longspur, 46 (310); Snow Bunting, 2 (0).

Count totals compiled by Hugh and Joyce Smith, Regina; reported by Margaret Belcher, Regina.

BANDING GREAT HORNED OWLS AND LONG-EARED OWLS, 1966

by **C. Stuart Houston**, 863 University Drive, Saskatoon

The GREAT HORNED OWL following the very poor year of 1965 when many pairs appeared not to nest, had a banner year in 1966. One year ago I banded only 13 nestling owls (five nests with two young each and three nests with single birds). This year, thanks to cooperation from readers of the *Blue Jay* and Doug Gilroy's column in the *Western Producer*, I was able to band 115 young in 51 nests. This brought my long-time total to 500 Great Horned Owls banded.

A pair of Great Horned Owls is able to raise four young only when there is an abundant food supply—this was achieved by two pairs this year, as compared to four in 1960, my most successful year (150 Great Horned Owls banded). However, this year there were more nests (21) with three young than with two (19)—an improvement over 1960. Nine nests raised only one young to maturity, but five were known to have had one or two more prior to our visit, and one egg was infertile and one cracked. In three nests, the smallest owl was too small to hold a band, so the 115 banded gives an average of 2.25 owls per nest. The only unsuccessful nests known to us were at Young where a single infertile egg was incubated until the end of May, and at Dilke where the nest was deserted early in May.

On three weekends, and a number of evenings, I put over 3000 miles on the Rambler. Mary accompanied me on two weekends, but the biggest weekend was on May 14 and 15 when my keen-eyed volunteer crew consisted of Bill Horseman, Jonathan Gerrard, Glen Fox, Floyd Connor and Doug Whitfield. They spotted six new nests while we were en route to other nests, speeding down the highway at 60 mph. Once, new nests were sighted only eight miles apart along Highway #2 south of Cudworth and later two active nests were spotted only two

miles apart on Highway #20 east of Domremy. Another nest sighted from the car from Highway #14 west of Saskatoon on an evening outing, contained four young (see photo) and was only a quarter mile from another nest containing three young.

Again this year a careful record was kept of uneaten food items in the nests. Eight nests contained no food at the time of my visit. The remainder contained 30 pocket gophers (as in 1960 the major food item), 12 American Coots, 9 barn rats, 6 rabbits, 5 Mallards, 3 Pintails, 1 Green-winged Teal, 1 Lesser Scaup, 1 Ring-necked Duck, 1 Gadwell, 1 Sora, 1 Yellow-headed Blackbird, 1 crow, 1 adult Long-eared Owl, 1 domestic fowl, 2 Gray Partridge, 1 Ruffed Grouse, 1 Chipping Sparrow, 2 mice and 1 shrew. This year was the first time that we have found domestic fowl or upland game in the owl larder during the nesting season.

I wish to express my appreciation to the following for assistance in locating Great Horned Owl nests in 1966: Steve A. Mann, Piapot; J. H. Brodeur, Assiniboia; David Green, Moose Jaw; Lorne Scott, Indian Head (3 nests); Jim Slimmon (3 nests); Doug Whitfield, Keith Ecklund, Marvin Schmidt, Joe Schmidt, John Black and J. B. Gollop of Saskatoon; Jim Dempsey, Young (2 nests); R. F. Klatt, Esk; Larry Dale, Plunkett; Blaine Bentley, Viscount; David G. Titman, Viscount; Bryan Isinger and pupils, Yellow Creek (3 nests); Marshall Evans, Ruddell; Peter Zadko, Cando; Bill Horseman, Saltcoats (2 nests); Mrs. H. Borman, Piapot; P. Laurence Beckie, Bladworth (2 nests); Trevor and Gwilym Jones, Findlater; Doug Gilroy, Regina; Hugh Smith, Regina; Wesley Carlson, Big Beaver; Mrs. Keith Paton, Oxbow; Ross Fockler, Broadview; Ricky Stevens, Yorkton; Larry Morgotch, Yorkton (2 nests); Gerald Churko, Willowbrook; Harold



Photo by Hans S. Dommasch

Young Great Horned Owls, 12 miles west of Saskatoon, May 20, 1966

Moldenhauer, Allan; J. L. and W. A. Marjerrison, Greenan; Lester Moore, Bradwell.

LONG-EARED OWLS, as in 1960, had a successful nesting season in 1966. Twenty nests yielded 65 banded young, plus two that were too small and two that left the nest some hours before my arrival and could not be relocated. As in 1960, it was common to have two Long-eared Owl nests within 100 or 200 yards of each other and eight of this year's nests were paired in this manner. Joe Schmidt, his brother Marvin and their friends deserve special credit for finding eight Long-eared Owl nests within a few miles of the western edge of Saskatoon. Keith Ecklund found another three. Actually we knew of 19 Long-eared Owl nests within the Saskatoon study area alone (including Bradwell, Asquith and Donovan). Two nests were destroyed by a stubble fire that ran wild, one was deserted, and the young from another nest were kept as pets for four days by children, but the young from the other 15 were banded. Also banded were nests at Okla (David Ashdown), Yorkton (Larry Morgotch), Indian Head (Mrs. Ken Skinner and Lorne Scott) and Hawarden (Harold Kvinge). The day

after I left for the International Congress of Ornithology at Oxford, Harold Moldenhauer found two more Long-eared Owl broods three miles west of Clavet, making a total of 21 Long-eared Owl nests for the Saskatoon area in 1966.

One of the nests destroyed by fire unfortunately was of special interest because it was on the ground. It was found by the Schmidt boys on April 29 and contained three eggs when I photographed it early in May, a week prior to its destruction. The first nest of this species found in Saskatchewan, 139 years earlier, was also on the ground in a bush when found in 1827 by Thomas Drummond, John Richardson's assistant naturalist. That year this species was also plentiful in the woods skirting the plains of the South Saskatchewan River.

The SHORT-EARED OWLS this year were not plentiful concomitantly with the Long-eared Owls, as happened in 1964. A nest on the Marjerrison farm at Greenan which I visited on May 28 contained seven young of different ages and four unhatched eggs. I did not band any of this species this year. Ross Lein had one successful nest on his study area north of Saskatoon.

SUMMARY OF THE FIRST EIGHT YEARS OF THE PRAIRIE NEST RECORDS SCHEME

by **Robert R. Taylor**, University of Saskatchewan, Regina

The Prairie Nest Records Scheme, to the end of its eighth year of operation, has accumulated a total of 7,221 record cards representing 236 species of birds. The records included in the files of the scheme cover the province of Manitoba, Saskatchewan, Alberta, and the Northwest Territories.

Since its inception in 1958, the Prairie Nest Records Scheme has enjoyed the support of more than 100 contributors, mostly non-professional.

Many of the cards contributed to the scheme record the presence of more than one nest in a particular location. For example, cards representing certain colony nesting birds such as gulls and terns may contain up to 20 nests. In the case of some waterfowl species and some species of upland game birds, the cards represent broods that have left the nest, rather than the nest itself.

During the eight years of operation of the scheme, a number of biologists have requested information from the files for use in scientific studies in which they were engaged. It is hoped that by presenting the following listing of cards available for each species,

more extensive use of the information contained on the Prairie Nest Record Cards will be encouraged.

Summary of Cards in Prairie Nest Records Scheme Files to end of 1965

Common Loon, 24; Arctic Loon, 2; Red-throated Loon, 7; Red-necked Grebe, 3; Horned Grebe, 43; Eared Grebe, 39; Western Grebe 7; Pied-billed Grebe, 38; White Pelican, 5; Double-crested Cormorant, 13; Great Blue Heron, 14; Black-crowned Night Heron, 5; American Bittern, 11; Mute Swan, 2; Whistling Swan, 13; Canada Goose, 36; White-fronted Goose, 30; Mallard, 301; Gadwall, 6; Pintail, 87; Green-winged Teal, 15; Blue-winged Teal, 73; American Widgeon, 29; Shoveler, 16; Redhead, 19; Ring-necked Duck, 3; Canvasback, 46; Greater Scaup, 6; Lesser Scaup, 26; Common Goldeneye, 7; Barrow's Goldeneye, 3; Bufflehead, 8; Old Squaw, 18; King Eider, 1; White-winged Scoter, 22; Ruddy Duck 26; Common Merganser, 3; Red-breasted Merganser, 14; Turkey Vulture, 1; Goshawk, 1; Sharp-shinned Hawk, 11; Cooper's Hawk, 35; Red-tailed Hawk, 136;



Wilson's Phalarope, May, 1965

Photo by Robert R. Taylor

Broad-winged Hawk, 4; Swainson's Hawk, 40; Rough-legged Hawk, 26; Ferruginous Hawk, 29; Golden Eagle, 7; Bald Eagle, 14; Marsh Hawk, 71; Osprey, 3; Gyrfalcon, 7; Prairie Falcon, 35; Peregrine Falcon, 17; Pigeon Hawk, 32; Sparrow Hawk, 34; Blue Grouse, 1; Spruce Grouse, 7; Ruffed Grouse, 25; Willow Ptarmigan, 32; Rock Ptarmigan, 1; White-tailed Ptarmigan, 1; Sharp-tailed Grouse, 17; Sage Grouse, 2; Ring-necked Pheasant, 2; Gray Partridge, 13; Whooping Crane, 4; Sandhill Crane, 2; Virginia Rail, 8; Sora, 29; American Coot, 245; Semipalmated Plover, 20; Piping Plover, 5; Killdeer, 167; Golden Plover, 3; Black-bellied Plover, 1; Common Snipe, 14; Long-billed Curlew, 3; Upland Plover, 6; Spotted Sandpiper, 28; Solitary Sandpiper, 3; Willet, 15; Greater Yellowlegs, 3; Lesser Yellowlegs, 3; Pectoral Sandpiper, 1; White-rumped Sandpiper, 2; Baird's Sandpiper, 4; Least Sandpiper, 1; Stilt Sandpiper, 1; Semipalmated Sandpiper, 5; Marbled Godwit, 15; American Avocet, 39; Red Phalarope, 1; Wilson's Phalarope, 35; Northern Phalarope, 7; Parasitic Jaeger, 3; Long-tailed Jaeger, 5; Glaucous Gull, 2; Herring Gull, 36; California Gull, 10; Ring-billed Gull, 12; Mew Gull, 6; Franklin's Gull, 5; Bonaparte's Gull, 2; Forster's Tern, 4; Common Tern, 42; Arctic Tern, 43; Black Tern, 63; Rock Dove, 4; Mourning Dove, 188; Black-billed Cuckoo, 14; Screech Owl, 2; Great Horned Owl, 141; Snowy Owl, 1; Hawk Owl, 2; Burrowing Owl, 6; Barred Owl, 1; Long-eared Owl, 57; Short-eared Owl, 31; Boreal Owl, 1; Saw-whet Owl, 2; Common Nighthawk, 15; Ruby-throated Hummingbird, 1; Rufous Hummingbird, 3; Belted Kingfisher, 10; Yellow-shafted Flicker, 78; Red-shafted Flicker, 3; Pileated Woodpecker, 2; Red-headed Woodpecker, 2; Yellow-bellied Sapsucker, 25; Hairy Woodpecker, 7; Downy Woodpecker, 17; Eastern Kingbird, 129; Western Kingbird, 52; Great Crested Flycatcher, 6; Eastern Phoebe, 87; Say's Phoebe, 11; Traill's Flycatcher, 3; Least Flycatcher, 61; Dusky Flycatcher, 3; Western Wood Pewee, 11;

Horned Lark, 107; Violet-Green Swallow, 1; Tree Swallow, 115; Bank Swallow, 31; Rough-winged Swallow, 9; Barn Swallow, 282; Cliff Swallow, 43; Purple Martin, 14; Gray Jay, 1; Blue Jay, 4; Black-billed Magpie, 172; Common Raven, 5; Common Crow, 127; Black-capped Chickadee, 8; White-breasted Nuthatch, 2; Dipper, 1; House Wren, 152; Long-billed Marsh Wren, 20; Short-billed Marsh Wren, 16; Rock Wren, 1; Mockingbird, 1; Catbird, 102; Brown Thrasher, 40; Robin, 353; Hermit Thrush, 4; Swainson's Thrush, 7; Gray-cheeked Thrush, 14; Veery, 18; Eastern Bluebird, 8; Mountain Bluebird, 42; Townsend's Solitaire, 1; Ruby-crowned Kinglet, 2; Water Pipit, 6; Sprague's Pipit, 4; Bohemian Waxwing, 7; Cedar Waxwing, 109; Loggerhead Shrike, 28; Starling, 19; Solitary Vireo, 1; Red-eyed Vireo, 14; Philadelphia Vireo, 1; Warbling Vireo, 25; Black-and-white Warbler, 2; Tennessee Warbler, 1; Orange-crowned Warbler, 1; Yellow Warbler, 100; Magnolia Warbler, 1; Myrtle Warbler, 6; Audubon's Warbler, 2; Chestnut-sided Warbler, 1; Blackpoll Warbler, 1; Palm Warbler, 2; Ovenbird, 4; Yellowthroat, 5; Yellow-breasted Chat, 2; American Redstart, 6; House Sparrow, 41; Bobolink, 15; Western Meadowlark, 67; Yellow-headed Blackbird, 102; Red-winged Blackbird, 410; Baltimore Oriole, 29; Rusty Blackbird, 3; Brewer's Blackbird, 163; Common Grackle, 59; Rose-breasted Grosbeak, 9; Purple Finch, 5; Pine Grosbeak, 1; Hoary Redpoll, 17; Common Redpoll, 17; Pine Siskin, 4; American Goldfinch, 23; Rufous-sided Towhee, 2; Lark Bunting, 32; Grasshopper Sparrow, 1; Le Conte's Sparrow, 2; Sharp-tailed Sparrow, 2; Vesper Sparrow, 111; Lark Sparrow, 7; Slate-colored Junco, 11; Oregon Junco, 3; Tree Sparrow, 33; Chipping Sparrow, 51; Clay-colored Sparrow, 173; Harris' Sparrow, 18; White-crowned Sparrow, 19; White-throated Sparrow, 7; Fox Sparrow, 1; Lincoln's Sparrow, 4; Swamp Sparrow, 2; Song Sparrow, 81; McCowan's Longspur, 3; Lapland Longspur, 23; Chestnut-collared Longspur, 112; Snow Bunting, 1.

SASKATCHEWAN REVISITED

by **Mary M. Tremaine**, University College of Medicine, Omaha, Nebraska

Blue Jay readers may be interested in "birding impressions" of an outsider in the province. I first visited Saskatchewan in 1961, and in spite of the drought had a thoroughly good time. This year I planned to come in July, not nearly as good as June for birds, but the best I could manage. I particularly wanted to visit the Battlefords area and drive the Hanson Lake Road all the way; on the previous visit I had fallen in love with the Nipawin Forest Reserve, and I expected the Hanson Lake Road to offer more of the same country.

Because of my previous visit, I found it interesting to compare the abundance of certain species of birds with my 1961 observations. Hawks, I found, were noticeably scarce throughout the province in contrast to my experience on the 1961 visit. I was also glad to look again for prairie species like the Chestnut-collared

Longspurs and the Sprague's Pipits, which I found near the beautiful Qu'Appelle Valley. North of Last Mountain Lake a pair of Short-eared Owls sat on a fence for us; I had never seen these in breeding plumage, so it was a real treat. I was so bemused that I forgot to use the camera on the seat beside me!

When I was in Saskatoon I visited the Medical School and met Dr. Houston. He called his wife, and out we went for a fine lunch with wonderful "bird talk". Saskatchewan is fortunate to have these fine people. I was a perfect stranger, but from their hospitality, one would have thought I was a best friend!

Because of car trouble, our stop at the Battleford Provincial Park was even longer than planned, and we got a good list of birds. In addition, we had time to watch the behaviour of such birds as the Franklin's Gulls that were already flocking. One evening there was a hatch of insects along a gravel road; the Franklins fed on the wing in the columns of insects (midges?) — it was at sunset, and a beautiful, exciting hour.

Highway 26 took us north of Spruce Lake and on this road we found a deep, U-shaped valley with spruce-muskeg type habitat right in the middle of typical farming country; we named it Glacier Gully. I was just explaining to my companion that this was the kind of country where we might hope to see a Bonaparte's Gull when a spot of white on top of a spruce tree caught my eye. Out came the binoculars and telescope, and there it was as advertised! It was indeed a Bonaparte's Gull in the full glory of breeding plumage. How was this valley formed, and why was its vegetation what one would expect to find farther north?

We visited the Meadow Lake Provincial Park and Flotten Lake and then I went on from Prince Albert to

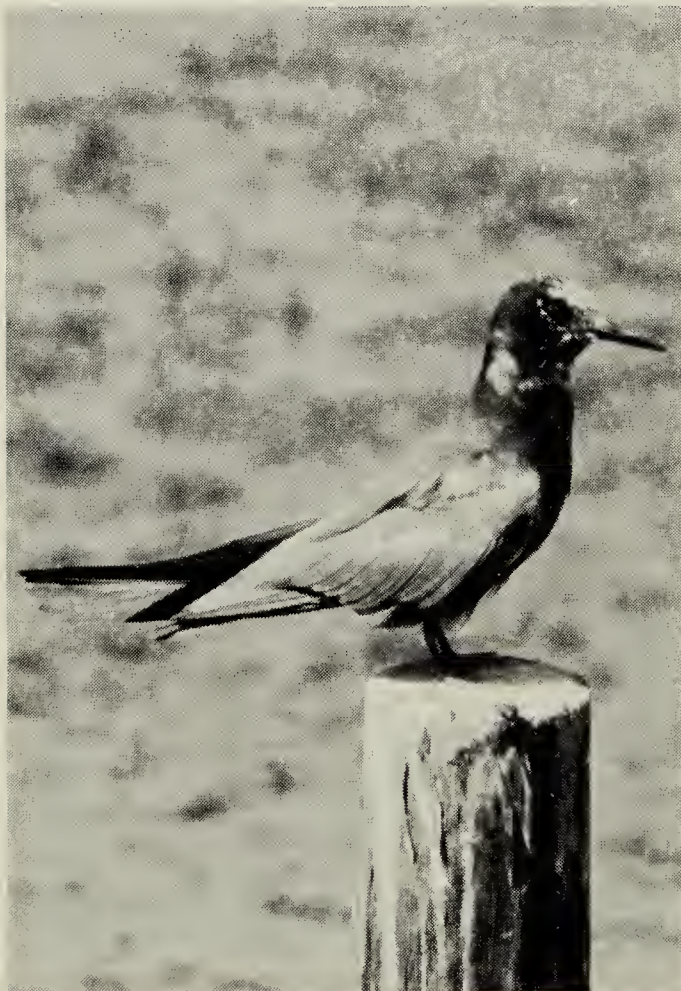


Photo by Mary M. Tremaine

Moulting Black Tern

Sandy Lake and Duck Lake. The latter was crowded with birds, just as it was when I was here in 1961. I wonder why this lake can carry such a high density of nesting ducks. I saw nothing unusual, but enjoyed myself immensely. Travelling east to Melfort on the small gravel roads yielded many ponds and many ducks—one Canvasback had 20 ducklings, all Cans and all exactly the same size. I thought there must have been two broods; can you imagine one duck managing to hatch 20 ducklings? I sat for three hours trying to photograph them, but the female was wily, and knew there was something in that brown canvas covered with grass and reeds. Nevertheless I had a fine time watching the youngsters even though I got no good pictures. My legs subsequently had a good rash from the bird *Schistosoma cercariae* in the water. Are ducks in Saskatchewan heavily parasitized with these flukes?

The last lap of my trip was the Hanson Lake Road, and it took me a week to drive to Flin Flon because there were so many beautiful places and birds to see. In a trip such as this summer's expedition into Saskatchewan one gains a great deal by observation of bird distribution and habitat; this aspect interests me greatly. The records of birds seen have been sent to the *Blue Jay* for its Saskatchewan bird files, including records of rare species like the Parula Warbler and Harlequin Duck that should be evaluated by Saskatchewan bird men. These unusual sightings were a great thrill for me, but no more enjoyable than the day-to-day opportunity to see birds in their natural habitat. I had a lot for fun, for example, photographing sapsuckers at a feeding tree which was visited by hummingbirds and butterflies as well. The hummingbirds were never on the tree at the same time as the sapsuckers, and fought vigorously among themselves for the best feeding hole. The male sapsucker evidently decided the old holes weren't producing well enough and spent almost an hour methodically producing new holes; the female busily gathered insects but the male



Photo by Mary M. Tremaine

Male Yellow-bellied Sapsucker

always left the tree while she was there — curious behaviour.

Some of the changes that I noted in Saskatchewan during this trip of course disturbed me. I was concerned, for example, at the use of DDT fog in the campsites every night; does it have to be DDT? The birds weren't abundant in the campsites as they were in my previous visit; fishermen complained that the lakes by the campsites had no fish. Is there a connection? I didn't see any insecticide being used in the Nipawin-Hanson Lake area, but it was certainly heavily used on the prairies. These campsites were very short on bird life, compared with my previous visit. I like to camp because I like to sit and have my coffee and watch the birds. This year I just drank my coffee, most of the time.

BUFFLEHEAD USES ARTIFICIAL NEST BOX

by **Richard S. Miller**, University of Saskatchewan, Saskatoon

The Bufflehead, *Bucephala albeola* (Linnaeus), breeds throughout the wooded regions of Canada north and west of the Great Plains. Where the species is common, nearly every small pond or lake may have a breeding pair (Bent, 1925). However, because of their habit of nesting in tree holes some distance above the ground, there are few direct observations of the nests and eggs. Perhaps the most complete description of the nesting habits of this species is provided by Brooks (Bent, 1925) who studied Buffleheads in the Cariboo District of British Columbia. The nests were almost invariably located in the deserted nesting holes of flickers. They were in aspen trees, from five to 20 feet above the ground, with an entrance hole never more than 3.5 inches in diameter. The number of eggs varied from two to nine with an average of eight, and were dusky ivory in colour.

Arnold (1895, *Oologist*, 12:168-170) reported collecting nine Bufflehead eggs from a hole eight feet up in a Balm of Gilead tree in Touchwood Hills in the then Territory of Assiniboia. Furniss (Houston and Street, 1959) recorded several nests around sloughs four miles south of Prince Albert. The birds were flushed from holes in trees but the nests were not observed directly. Nero (with Lahrman) found a nest at Milliken Lake near Uranium City, June 25, 1960. Nero (1963) also reported a nest at Carswell Lake on July 14, 1962. The female was flushed from a nest cavity 10 feet high in a jackpine located about 40 feet above the water and 40 feet back from the water's edge. Herbert Massey (Bent, 1925) found a Bufflehead nest at Island Lake, Saskatchewan, in an old flicker hole 20 feet above the ground. The eggs lay 15 inches below the opening to the nest and the tree was 30 feet from shore. Massey collected the entire set of 10 eggs. He also took another set

of 10 eggs at Montreal Lake from a nest site almost identical to the one at Island Lake. These two sets were all he found during a season's work with this species in Saskatchewan.

The present observations were made at Emma Lake, where Buffleheads are quite common during migration in spring and fall. Furniss (Houston and Street, 1959) reported that Buffleheads were common nesting birds at Emma Lake during the 1930's, but Mitchell (1924) listed this species as "not common". Mowat (1947) collected an adult and one young from a family of Buffleheads on a small pond on the shore of Emma Lake.

Broods have been observed in the vicinity of the University of Saskatchewan Biology Station on Fairy Island every year for the past five years, but no nests were observed until this year. On June 9, 1966 a female Bufflehead was seen leaving a nest box, originally installed by Wayne Davis in 1961 for his study of flying squirrels. These nest boxes are approximately six inches square and nine inches high with a hinged top and a 2.5 inch entrance hole 6.5 inches from the bottom of the box. The nest boxes have a perforated, hardware cloth bottom and are usually provided with a small amount of sawdust or litter. This particular nest box was 10 feet high in a spruce tree, 74 feet from the lake shore. When first observed, there were seven eggs. There was very little down and the eggs rested on the bare hardware cloth and could be seen from the underside of the nest box. The colour of the eggs was ivory, tinged with green. Brooks (Bent, 1925) reported that he had several times seen the eggs of this species described as "dusky green", but the eggs of Buffleheads in the Cariboo were invariably ivory with no tinge of green, and he assumed that the dusky green eggs reported by other observers were of "some species of teal". A. J. Erskine,

Canadian Wildlife Service biologist, Sackville, New Brunswick, who is making a special study of the Bufflehead, says that he has never seen a trace of green in Bufflehead eggs himself (personal correspondence).

The nest was examined again on June 23. At this time the eggs were still visible from the underside of the nest box and it seemed advisable to provide some sawdust for insulation. The female had to be lifted off the nest. There were still seven eggs. The eggs and down were removed, a layer of sawdust was placed in the box, and the eggs and down replaced. The hen returned shortly and showed very little hesitation in re-entering the nest while observers were within about 50 feet of it. By June 26 the eggs had hatched and the nest contained seven young. On June 28 a female Bufflehead with a brood of seven ducklings was observed on the lake in the vicinity of this nest, and when the nest box was examined on

June 29 it was found that all of the young had left the nest.

Although this observation showed that Buffleheads will use artificial nest sites of this sort, one requirement seems to be that they be located reasonably close to water. Next year additional boxes will be installed in what appear to be suitable locations, in the hope that more can be learned about the nesting habits of this charming but somewhat elusive species.

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PINE SISKIN NESTINGS IN SASKATOON, 1966

by **Robert R. Cohen**, University of Saskatchewan, Saskatoon

Two Pine Siskin, *Spinus pinus* (Wilson), nests, apparently the first for the Saskatoon area, were found in the city on June 15 and August 15, 1966. The first was located at a height of approximately 17 feet in a White Spruce, *Picea glauca* (Moench) Voss, in the residential area near 7th Street and Lansdowne, and contained eggs when first found. The nest and eggs were later photographed by J. Slimmon of Saskatoon.

The second nest was located at a height of approximately 30 feet in an American Elm, *Ulmus americana* L., near the Arts Building on the campus of the University of Saskatchewan. It contained fully-grown nestlings. The selection of a deciduous tree as a nest site was rather unusual, especially since there were several spruce trees within 300 yards of the elm. Adult Pine Siskins had been seen in

mid-July in the same area of the campus attempting to copulate and feeding fully-fledged young; it is quite possible, then, that the nest found on August 15 represented a second nesting for the summer by that pair of Pine Siskins.

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EASTERN BLUEBIRDS NESTING AT INDIAN HEAD

by **Lorne Scott**, Indian Head

I started building bird houses in the spring of 1963. I made 16 houses that year, some from boards and some out of hollow trees. I placed these around the farm yard and all were occupied by House Sparrows.

In 1964 I built another 26 houses. These were placed around the farm yard and a few in the fields. In addition to the House Sparrows, I had six families of House Wrens that year. That summer I found a pair of Mountain Bluebirds nesting in a natural hollow tree in a bluff in the field, and resolved to entice some Mountain Bluebirds into my houses the next year.

In 1965 I added another 34 houses. Most of these I attached to trees in bluffs in the fields, but six I placed on fence posts in the open fields. The latter were most successful, as three were occupied by Mountain Bluebirds and one by Tree Swallows. The swallows and one pair of bluebirds raised their young successfully.

During the last winter I made another 74 houses to bring my total to 150, all made from hollow trees, and I placed these on fence posts and power poles in the fields before May 1. Most thrilling and unexpected were the two pairs of Eastern Bluebirds, a species that has not been known to nest in Saskatchewan for many years. One nest had five eggs and the other had four eggs. A total of eight young were fledged from the two nests. Ten boxes were occupied by Mountain Bluebirds and 40 young were raised in the eight successful nests. All 17 Tree Swallow nests were successful, with 94 young raised. One pair of Yellow-shafted Flickers raised six young in one of my boxes. Twenty-four pairs of House Wrens raised about 125 young.

I make most of my bird houses from hollow trees or dead trees whose centre is rotten and easy to remove. Each suitable tree is cut off at the ground, brought home and sawed into



Lorne Scott and nest-box

Photo by Robert R. Taylor

blocks about 10 inches long. Thus I get from six to 10 houses from one tree. A notch an inch and a half wide and an inch and half deep is cut out at one end; when a board is nailed over this end, this becomes the entrance hole. Two drainage holes are drilled in the board applied over the other end, and this forms the floor.

The houses are placed at least 300 yards apart, on poles five or six feet from the ground. The entrance holes face east or south, away from prevailing winds. Each house is wired to the post, and further secured by two nails driven obliquely through the back of the house into the post.

This summer I have put up another 50 houses, so that 200 will be in readiness for next spring. I have a record of each house, including its location, the species using it, number of eggs, number of young raised, complete with the date of its erection and each occurrence thereafter.

I am still waiting for Purple Mar-

tins. Last winter I built a 28-room martin house, which I placed on the windmill in our yard. Purple Martins visited it off and on throughout June but did not stay to nest. I hope they will take up residence next year.

EASTERN BLUEBIRDS

by David N. Ashdown, Okla

A pair of Eastern Bluebirds nested this year (1966) at Okla, 40 miles northwest of Yorkton. Their home was a bird box of rough lumber placed in an aspen poplar at the edge of a pasture three miles south of the town. The nest was found on June 6, and observed to have two eggs on June 10 and five eggs on June 13. It was visited by Dr. Stuart Houston on June 20 when the female was lifted from the nest box and banded. The five young were raised successfully and were last seen on July 13. Nearby a Mountain Bluebird successfully raised six young, these birds being only a few days old at the time of Dr. Houston's visit on June 20.

AFTER 50 YEARS, THE EASTERN BLUEBIRD NESTS AGAIN AT REGINA

by Margaret Belcher, 2601 Winnipeg St., Regina

Fifty years ago people who talked about bluebirds in Regina appear to have meant Eastern Bluebirds. At least, the bluebird that Mitchell saw raising two broods in Regina in 1916 is known to have been of this species (Belcher, 1961). On the other hand, for the 20 years that I have been in Regina, our bluebirds have been Mountain Bluebirds, seen commonly in migration and nesting just beyond the Regina area as one goes north to the Qu'Appelle Valley through country sprinkled with aspen groves. Indeed, we have come to recognize the Mountain Bluebird as the common breeding bluebird of Saskatchewan and to think of the Eastern Bluebird as rare, except for occasional observations in spring and fall migration. Obviously some changes have taken place over the years in the status of these birds, and it is interesting to go back to early accounts to see whether

we can trace any pattern of occurrence.

Mitchell (1924) described the Eastern Bluebird (*Siala sialis*) as a "fairly common summer visitant locally through transition zone, found breeding in Cypress Hills and Moose Mountain and northward to Hudson Bay Junction." There is no suggestion in this statement that the Eastern Bluebird was to be expected only in the eastern part of the province, and he further comments in reference to the Mountain Bluebird that the range of the two species overlaps.

Further particulars of the Cypress Hills records referred to by Mitchell are supplied by Godfrey (1950) who tells that Laurence Potter had a pair breeding at Eastend in 1922 and reported the appearance of an additional pair in 1923 that did not nest. In 1943, however, Potter wrote that the bird was then an irregular and un-



Photo by Arnold Foster

Male Eastern Bluebird at nest box in Regina, August 1, 1966

common visitant. Godfrey found it significant that Bent had not recorded the species in his 1907 expedition into southwestern Saskatchewan, reported in 1908, nor had Taverner and Laing recorded it in 1921. It is possible that Potter's observations mark the first appearance of the Eastern Bluebird so far west, for Bent writing in 1949 states: "The eastern bluebird has extended its range westward within a generation or two. At Portage la Prairie, Manitoba, in 1884 it was referred to as a 'recent arrival'. In 1909, Macoun did not mention any occurrence of this species in Saskatchewan; in 1922 it was found breeding in the Cypress Hills of southwestern Saskatchewan." In 1948, from one to five birds were seen in the proximity of ranch houses on the north slope of the lower Cypress Hills by Godfrey's party during the month of June, indicating that the species was still being recorded in that area. In the adjacent Maple Creek ranching country, Steve Mann of Piapot recorded an Eastern Bluebird on April 27 of this year (1966); this was only his third observation of the species in

the many years that he has kept records in this area.

Bent's conclusions with respect to the first occurrence of the Eastern Bluebird in Saskatchewan are further borne out by an historical study of the bird species in the Qu'Appelle Valley now being made by Manley Callin. Callin has found that early observers who visited or lived in the area from 1858 to 1896 did not record either species of bluebird. However, in 1907 and 1909 George Lang recorded the Eastern Bluebird as a transient at Indian Head, and in 1929 he described it as a rare nester. Through the 1930's and 1940's the Eastern Bluebird continued to be regarded as a regular, but uncommon, summer resident in the eastern section of the Qu'Appelle Valley region being studied by Callin, but in this same area from 1949 to 1962 only one record was reported, and farther west in the valley bottom at Fort Qu'Appelle Callin has never seen the species in 23 years of observations from 1943 to 1966.

The record of a nest with four eggs found June 14, 1923 at Hudson Bay

Junction (Sask. Museum of Natural History files) justifies Mitchell's inclusion of this locality in the breeding range of the Eastern Bluebird, and on the strength of this record the species was to be expected in central as well as in southern Saskatchewan. In the Yorkton district, Houston (1949) reported it as "rather uncommon; no nesting records as yet." At Nipawin it is considered a "rare straggler" (Houston and Street, 1959) and one was seen by C. Stuart Francis on his farm at Torch River, May 21, 1957. One was reported seen at Roddick, May 21 to June 22, 1927 by Bard and Mitchell and one southeast of the city of Prince Albert about 1934 or 1935 (Houston and Street, 1959). North of the city of Prince Albert, on the north side of Emma Lake, Fred Bard saw one bird on August 2, 1932 (Sask. Museum of Natural History files). At Tullis, west of the South Saskatchewan River, Roy (1964) saw a family of five during the entire late summer and fall of 1938. Much farther north, in the Lake Athabasca region, the bird is on the hypothetical list, for a bluebird seen there by Dr. J. Beatty in the fall of 1959 is believed to have been an Eastern Bluebird (Nero, 1963).

These representative studies seem to indicate a somewhat erratic occurrence of the bird in Saskatchewan rather than any definite pattern of increase and decline in population, or even any gradual and persistent extension of range. It is perhaps in this context that it is best to see the 1966 nesting records from Okla (southeast of Kelvington), Indian Head and Regina. Furthermore, it is not clear from these studies whether the movement of the Eastern Bluebird into Saskatchewan is principally from the east, or whether it may come in part from the south. We know of breeding populations to the south and southwest, the A.O.U. *Check-list* (1957) reporting that the species "breeds from southern Saskatchewan (Cypress Hills, Eastend, Davidson) . . . along the eastern foothills of the Rockies in Montana (Great Falls, Billings) . . . more commonly through the Dakotas . . ."

In any case, some excitement was

occasioned this summer in Regina by the first nesting of the Eastern Bluebird in the city in 50 years. The breeding pair was first seen at the home of Arnold Foster about July 7, and the Fosters' tentative identification of them as Eastern Bluebirds was confirmed by Vic Schmidt of the Saskatchewan Museum of Natural History on July 26, by which time young—probably a few days old—were found to be in the nest. Notes kept by the son, Stephen Foster, record that the birds were seen frequently feeding their young from July 30 to August 5, during which time the adults were photographed by Mr. Foster and members of the Museum staff. On August 9 the first young were seen out of the nest attempting to fly, and on August 12 the birds were seen for the last time. The birds nested in a brightly painted green and yellow bird house mounted some six feet above the ground along a wall bordered by a path that was frequently used, and did not seem to be at all disturbed by people.

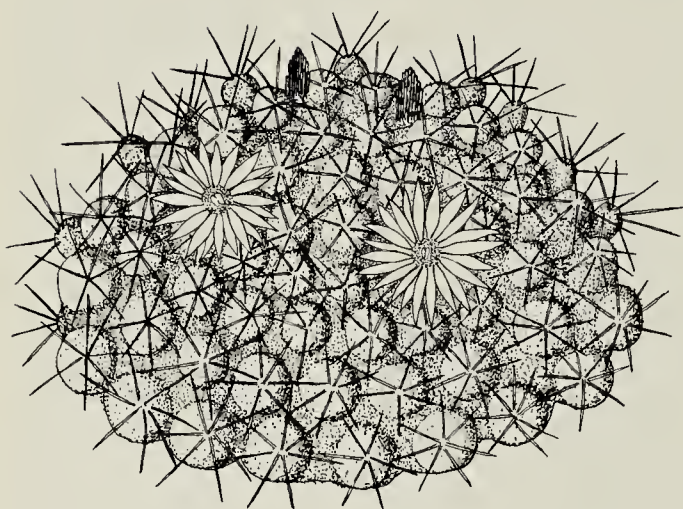
Mr. Foster wondered if the bluebirds which nested in their yard in July were raising their second brood, and this is entirely possible. In connection with this breeding record it is of interest to note that we have what appears to be a record early arrival date for this species in the Regina area this year, for three Eastern Bluebirds were seen on March 30 by W. H. Beck and R. R. Taylor.

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CACTI

by **Keith F. Best**, Experimental Farm, Swift Current



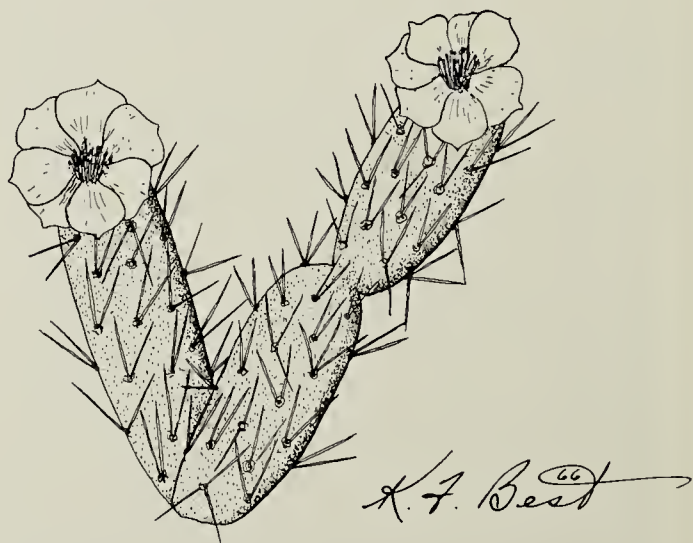
Purple Cactus, *Mamillaria vivipara*

There are three species of cacti commonly found on the prairies. The Ball or Purple Cactus *Mamillaria vivipara* (Nutt.) Haw., is a perennial with a fleshy, thickened and somewhat succulent stem. It resembles a small, rounded pin-cushion and consists of a series of cone-shaped tubercles each bearing a tuft of sharp spines. Several of these spiny balls may grow together in clusters of various sizes. The flowers are borne between the tubercles, and are from 1½ to 2 inches across, with numerous purple or dark-red petals and a yellow centre of many stamens. The fleshy berries are pale green, about

one-half inch long and are very sweet and edible when ripe.

The Prickly-pear, *Opuntia polyacantha* Haw., is a perennial with flattened stems that are jointed and divided into somewhat plate-like sections called internodes. Bright green in color, these prostrate plants grow in large clumps. The yellow to pinkish-orange flowers are wax-like in appearance and are from 2 to 3 inches across. The fruit is a prickly berry, known as a tuna, and it is about 1 to 1¼ inches in length. The fruits contain numerous seeds and are sweet and edible.

Brittle Prickly-pear, *Opuntia fragilis* (Nutt.) Haw., forms large red or reddish-green mats and has stem



Brittle Prickly-pear, *Opuntia fragilis*



Prickly-pear, *Opuntia polyacantha*

internodes that are often circular in cross-section and that are easily broken off from the plant. The flowers are a lighter yellow than those of *O. polyacantha*.

The fleshy elongate berries of cacti once formed an important supply of food for the natives who also used the stems as food after roasting them. The young fleshy joints of the Prickly-pears may be roasted, boiled or fried, after first removing the spines by burning or by slicing off spines and outer coat in one operation.

SAVING OUR COUNTRY ROADSIDES

Much of the charm of our country roadsides has been destroyed by the grading which is necessary to make all-weather roads in a province which has wind and snow in winter. When such construction is necessary, a good deal can be done to restore the attractiveness of the roadway after the road is built. On other occasions, especially in areas of aspen parkland or forest, we could do much more to preserve part of the original beauty of the landscape, which is so often disregarded in the building of a road.

Across the continent the attitude toward roadside preservation is becoming more thoughtful. In a recent article in *Canadian Audubon* (March-April, 1966) Charles Sauriol reviews the ideas on this "new challenge to conservation" that came from a stimulating conference in Ontario last October. This Provincial Waysides Conference demonstrated what one newspaper called "growing public concern about the steady loss of trees, wildflowers and plain old-fashioned

attractiveness along Ontario's roadsides and rights-of-way." Its principal speaker was Dr. Robert Ellarson of the University of Wisconsin, who described Wisconsin's new programme of Selective Brush Management for the Protection and Improvement of Roadsides, a programme consisting of a major "face-lifting" operation of the rural roadsides of the State. The Wisconsin programme is soundly based on research, for example on a 1929 Wildlife study which showed that the loss of quail population in Columbia county was directly related to the loss of 61 per cent of the hedgerows of which two-thirds were along roadsides.

The Ontario Waysides Conference was able to show that roadsides could be maintained in a natural state without detriment to sound farming practices, and emphasized the benefits from such roadside management—protection from wind and snow, retention of moisture, provision of wildlife refuges. It is encouraging that



Country road, east of Regina, 1966

Photo by Robert R. Taylor

these conservation experts were also ready to consider the aesthetic values of natural roadsides where numbers of hikers and motorists can enjoy the scenery. Hal Borland, in his book *The rural roadside*, suggests that this latter consideration is really important, for we need the country roads that were laid out for leisurely travel, "as a relief from the haste and tensions of the highways."

Charles Sauriol describes how, in the eyes of the naturalist, our country roads are "picture windows of the changing seasons, where in winter the wind-moulded snow drapes its forms on weed and shrub stalk, where the brooks make ice bijouterie with the help of frost and the splashing current, where in spring the golden catkins of willows glow from the thickets, as do the red cockades of the maple flowers. Who has not heard of an April evening from the roadsides pools the welcome voices of wood frog, hyla or spring peeper, of swamp tree frog—or in summer the staccato tapping of a woodpecker or plaintive call of a wood pewee?"

He also quotes President Lyndon Johnson's statement: "By making our roads highways to the enjoyment of nature and beauty we can greatly enrich the life of all our people in city and countryside alike. Our task is twofold. First to ensure that roads themselves are not destructive of nature and natural beauty; to make our roads ways to recreation and pleasure . . . the forgotten outdoorsmen of today are those who like to walk, hike, ride horseback or bicycle. For them we must have trails as well as highways. Nor should motor vehicles be permitted to tyrannize the more leisurely human traffic."

The Ontario conference seriously considered the preserving of picturesque back roads which all through southern Ontario wind up hill and down, past abandoned farmlands, through cedar or balsam lowlands, alongside woodlots, by protecting them from indiscriminate and often needless spraying and cutting. They also considered improving roadsides by plantings of staghorn sumac, bitter-

sweet, elderberry, dogwood, honeysuckle, chokecherry, wild apples, etc. Main arteries of travel have to be treated differently, of course, for here road design has to take into consideration the problems of traffic volume and safety. The conference, however, felt that many of the older, winding roads could be preserved as they are, and that roadsides so preserved could even be marked as such by plaques or signs similar to those in provincial parks. Although our situation in Saskatchewan is different from that in Ontario, the same principles of roadside protection apply. For example, while we are thinking of a scenic motor highway along the Qu'Appelle River, we should certainly be planning at the same time for a natural road or hiking trail which will represent the original landscape of the Valley.

HERBARIUM IN REGINA

The collection of vascular plants in the University of Regina is growing rapidly now that proper care and storage can be given to the specimens. The herbarium may be visited by botanists (amateur and professional) who have permission.

The collection contains over 8,000 specimens. The Cyperaceae (1,200 specimens) has good representation for the collection began when I was studying *Carex* and other sedges. There are 682 specimens in the Gramineae and 851 in the Compositae. The family which has received most attention, however, is the Leguminosae. There are 2,600 specimens in the Leguminosae now and many more waiting to be identified and added to the collection. This part of the herbium has special research value.

The collection has representative specimens of Saskatchewan and Canadian flora and is becoming increasingly valuable for teaching. Several people have offered to contribute and it is hoped that summaries of additions may be printed in the *Blue Jay*. —George F. Ledingham, University of Saskatchewan, Regina.

DR. M. V. S. RAJU AND HIS STUDY OF LEAFY SPURGE IN SASKATCHEWAN

Research into the growth and development of leafy spurge, a common perennial weed which causes considerable crop loss and is toxic to young livestock, is under way at the University of Saskatchewan, Regina.

Dr. Raju is using a growth chamber to study individually and in total the effect on the weed of such environmental factors as light, humidity and temperature. Growth chambers are highly useful not only to simulate natural conditions but also to conduct controlled studies of environmental factors.

Light, for example, can be applied at various intensities while other factors are kept constant and the effect on the plant of different light levels can be determined. Dr. Raju says he hopes through experiments of this kind to find out how leafy spurge grows and then how to control its growth. He feels that the main problem with leafy spurge is its regenerative capacity. "Even a small piece of root can regenerate into a new plant. Fragments from any depth can develop into new plants and consequently the conventional method of deep tillage is of no use as a control. It is this capacity of roots for regeneration that makes the weed compete with crop plants and other vegetation, and resistant to the commonly used herbicides."

The growth chamber can be used for controlled studies of the effects of chemicals on the development of leafy spurge. This might lead to the discovery of a chemical that could control the regenerative capacity of the weed. Dr. Raju says that growth chambers are becoming increasingly popular in universities and research institutes and have several advantages over greenhouses for experimental studies. They are more efficient than greenhouses and can control several environmental variables. He added that, among other things, they are used to keep plants growing continuously to find out the

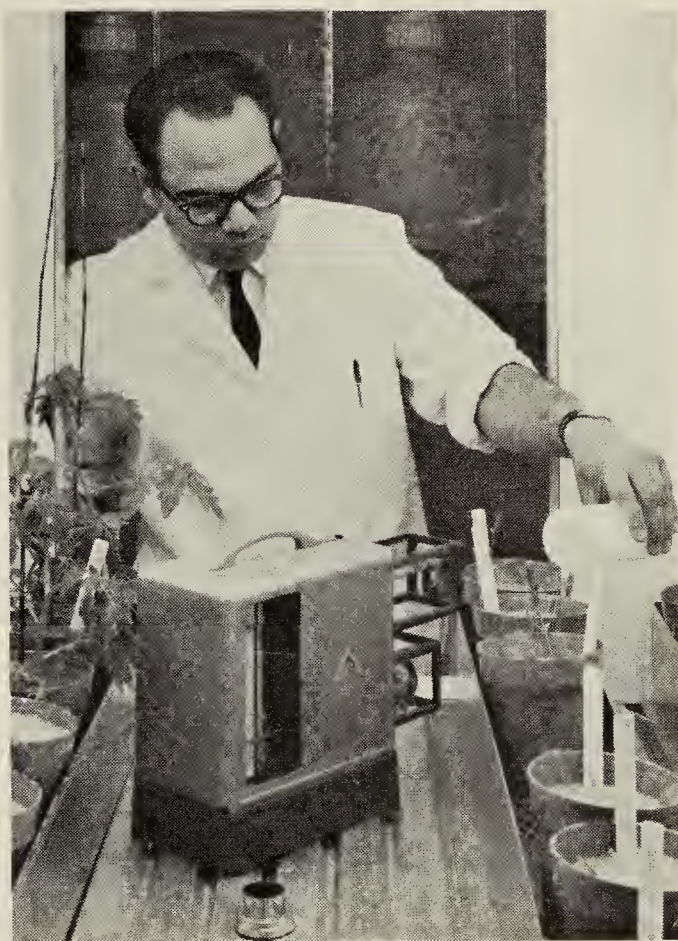


Photo by Robert R. Taylor

Dr. Raju pours a nutrient solution on plants in a growth chamber. The instrument in the foreground is for recording temperature and relative humidity.

nutritional and other environmental requirements for proper growth and to produce better plants.

Dr. Raju, a specialist in the anatomy and morphology of vascular plants, came to Regina in 1964 as assistant professor in biology. Previously he worked as a post-doctoral fellow at the University in Saskatoon and while there he began his research on leafy spurge. Dr. Raju is a native of India, where he received his early education. He has his bachelor and master of science degree from the University of Mysore, Bangalore, India, and his doctor of philosophy degree from Washington University, St. Louis, Missouri.

Editor's Note: We are pleased to give credit to the *Western Producer* (October 20, 1966) for the above article and photo.

WHITE-TAILED DEER NEAR FORT SMITH, N.W.T.

by **E. Kuyt**, Canadian Wildlife Service, Fort Smith

Deer in the Northwest Territories have been reported occurring near Fort Liard and South Nahanni on the Liard River, near the west end of Great Slave Lake and as far north as Fort Simpson and Wrigley on the Mackenzie River (Summary report by D. R. Flook, Canadian Wildlife Service files, January 15, 1965). Without exception, the various reporters have indicated that deer were rare and that the species involved was the Mule Deer. It is most likely that near the northern limit of their range, the deer population fluctuates greatly, depending upon the vagaries of the northern climate.

Hall and Kelson in *The Mammals of North America* (1959, Vol. II, p. 1005) include Fort Simpson and the west end of Great Slave Lake in the northern part of the Mule Deer's range. By contrast, the range of the White-tailed Deer in North America is shown to extend northward only to an east-west line through Canada at about the latitude of Edmonton (Hall and Kelson, op. cit., p. 1009).

In view of the approximate northern range limit of the White-tailed Deer as given by Hall and Kelson, it is of interest to record several reports of White-tailed Deer that have come to my attention:

1. On September 13, 1965, Constable Glen Wood of the R.C.M.P., Fort Smith Detachment, informed me that he had seen a White-tailed Deer near Salt River about 12 miles south of Fort Smith. At that place, the Salt River forms the northeast boundary of Wood Buffalo National Park.

2. That same fall and just after the first frost, my wife and I observed tracks of a herd of five deer in frozen mud along the road at a point about five miles southwest of Bell Rock, N.W.T. The tracks were seen north of the Alberta boundary and were seen independently by another resi-

dent of Fort Smith. The five animals had been walking and I was unable to determine whether the tracks were those of Mule Deer or White-tailed Deer.

3. Finally, on August 28, 1966, my wife and I, while driving along the same road and about eight miles west of Bell Rock, N.W.T., saw a White-tailed doe jump across the road. Both of us have seen numerous White-tailed Deer in Saskatchewan and the present observation was made during daylight hours and at a range of less than 40 yards. The doe showed the typical reddish brown coat and was in good flesh. An examination of the area failed to show any other deer tracks.

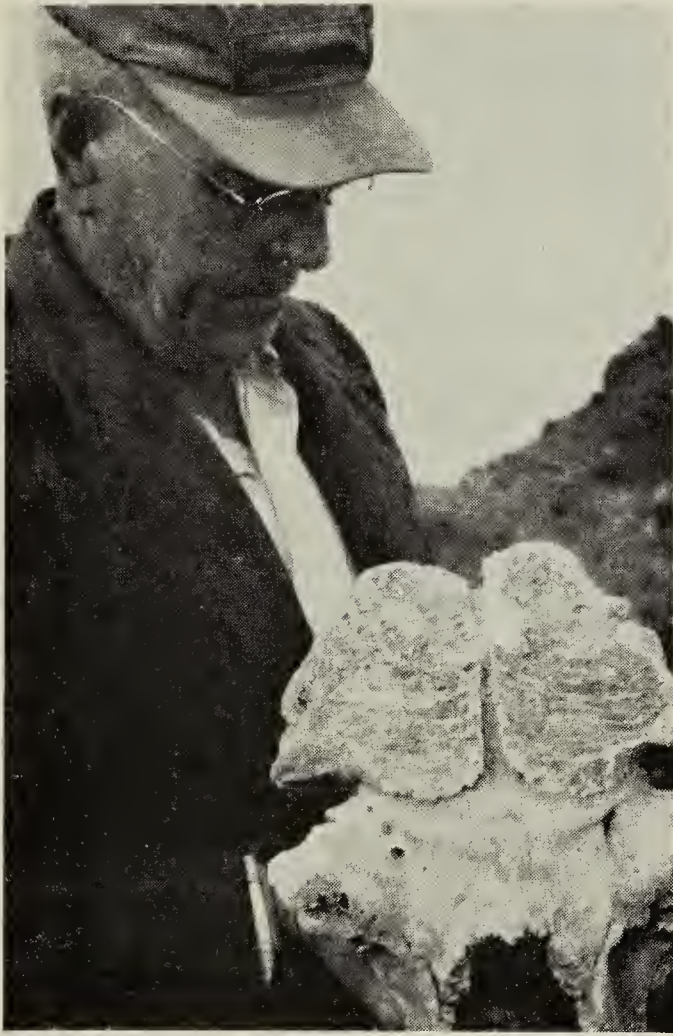
Wardens of Wood Buffalo National Park have told me that White-tailed Deer are sometimes seen west of Peace Point. The observations of White-tailed Deer reported here were made approximately 400 miles north of the northern range of this species as given in *The Mammals of North America* by Hall and Kelson.

GRIZZLY BEAR SKULL FROM ONTARIO

In 1964 as reported by R. L. Peterson (*Nature*, 208:1233, 1965) a Grizzly Bear skull in excellent preservation was found near Lake Simcoe, Ontario. The skull was $11,700 \pm 250$ years old. W. M. Tovell and R. E. Deane of the Royal Ontario Museum (*Science*, 154:158, 1966) visited the site and explain that the gravel pit in which the skull was found is lower than the water level of glacial Lake Algonquin. The gravel deposit was built on an island or headland and deposition was extremely rapid which explains the excellent preservation of this Grizzly Bear skull.

AGE OF MUSKOX SKULL FOUND AT GRANDVIEW, MANITOBA

by **Watson Crossley**, R.R. No. 4, Grandview



Watson Crossley and the
Muskox skull

In the March, 1964 *Blue Jay* (22: 34) I reported the recovery of a Muskox skull from a gravel deposit along the Valley River at Grandview, Manitoba. There were indications that the gravel deposit in which the discovery was made might have been formed soon after the last glaciation period but one could only speculate as to the age of the relic. The town of Grandview is located in a valley between the Riding and the Duck Mountains on the western edge of ancient glacial Lake Agassiz.

I sent the skull to Ottawa for study by the Wildlife biologists there and it has now been returned to Grandview. The Department at Ottawa identified the specimen as being that of the modern mainland type of Muskox, *Ovibos moschatus moschatus*. A radiocarbon test has also been

made of a sample of bone from the skull. The age of the skull is 8,600 years. The result of this age test was given to me in June, 1966, by Dr. R. W. Klassen who called at my museum to see the skull and to inspect the site in which it had been found.

The age of this skull, determined by the first radiocarbon dating of a Pleistocene or Post-Pleistocene Muskox in Canada, is of considerable interest. It gives us some idea of when the Muskox now ranging north of Churchill were migrating through this part of Manitoba from their range, as far south as Kentucky, during the glaciated period.

RIVER OTTER AT SASKATOON

by **Alan Smith**, 310 Ave. X North, Saskatoon

On August 21, 1966, I was trekking along the Beaver Creek Nature Trail which runs from Saskatoon south to the mouth of Beaver Creek. I followed the trail to the end of the completed portion and then continued along the edge of the South Saskatchewan River. I stopped for a moment to scan the river bank and much to my surprise I saw an adult River Otter slide down the bank and into the water.

I searched the place in the hopes of finding its den and perhaps some young. I soon found the den but there were no young, so it may have been the den of a male. His home had been left high and dry by the drop of the river as a result of the filling of the Saskatchewan River Dam Reservoir. The den had been dug about 2½ feet into the bank, and was about 1½ feet wide and 1½ feet high and was lined with strips of willow bark.

I was very proud to see such a rare and elusive mammal as the River Otter. This rewarding experience demonstrates to me how important and valuable the development of natural areas such as the Beaver Creek Nature Trail can be.

A PARTIAL ALBINO MEADOW VOLE

by **Larry Morgotch**, 15A Bradbrooke Apts., Yorkton



Photo by Larry Morgotch

Partial albino Meadow Vole

Stewart Pinder, a farmer near Springside, Saskatchewan, captured a white mouse on October 21, 1966. He found it when he was picking up bales on his farm. The mouse was given to Les Merriman in Springside and at time of writing (October 31) it is still in a healthy and lively condition.

When I heard of this mouse I drove to Springside to see it and to photograph it. It has all of the characteristics of a Meadow Vole, *Microtus*

pennsylvanicus (Ord). Its body is 3½" long; its tail is 1½" long. It has five toes on its hind feet but it appears to have only four toes on its front feet for the thumb is very much reduced. The right eye had been injured and was closed but the left eye has a black pupil and the iris is sky blue. At first glance the animal appears white but the fur on the back has a slight tan colour. Because the eyes are not pink and the fur is not pure white this Meadow Vole cannot be called an albino.

LEPIDOPTERA COLLECTED IN THE PERRY RIVER REGION, NORTHWEST TERRITORIES

by **Spencer G. Sealy**, Department of Zoology, U.B.C., Vancouver

During the period July 8 to August 12, 1965, the writer assisted J. P. Ryder in Canadian Wildlife Service studies of Ross' Goose in the Perry River region, Northwest Territories (67° 42' N, 102° 15' W). During this time a collection of Lepidoptera was made, the results being presented here. The specimens, deposited in the

Canadian National Collection of Insects (Lot No. 66-59), were identified through the courtesy of Dr. J. E. H. Martin by taxonomists D. F. Hardwick, G. Lewis, and W. C. McGuffin of the Canada Department of Agriculture, Entomology Research Institute in Ottawa.

(Continued on page 202)

Junior Naturalists

Edited by **Joyce Deutscher**, 7200 6th Ave., Regina



Copy of drawing by Jonathan Davis, age 8, Winnipeg

COMMENTS

Once again the Brandon Junior Bird Club is to be congratulated on its work and the excellent report sent in by Wayne Miller. You will also notice that a large number of contributions for this issue come from the students of one school. Many thanks to Mr. Isinger for encouraging his students to write and for sending in the material.

Just a word about sending in sketches. For purposes of reproduction the lines should be clear and dark, preferably done with India ink or a pencil capable of making a dark line. The drawings should be done on unlined white paper. You will notice that we did a copy of Jonathan's drawings because his original drawings were done on lined paper.

Juniors are reminded to get their contributions in for the next issue by January 15. Send them to Mrs. Joyce Deutscher, 7200 - 6th Ave., Regina.

POLYPHEMUS LARVA

by **Jonathan Davis**, age 8, Winnipeg

While on holiday at Falcon Lake, Manitoba, I nearly trod on a large

green caterpillar. I took it to our cottage and identified it in The Insect Book as being the larva of the polyphemus moth. I put it in a jar with oak leaves and a twig from an oak tree. It straightaway made itself a cocoon in one of the leaves attached to the twig.

THE ANNUAL REPORT OF THE BRANDON JUNIOR BIRD CLUB'S NEST PROJECT

by **Wayne Miller**, age 15, Brandon, Manitoba

The efforts of the Junior Birders once again resulted in another successful season for the nest project.

Due to a very late return of Eastern Bluebirds last spring, they only managed to raise one brood. Both species of bluebirds, however, continue to expand their territories.

The nest project scored several firsts this summer, such as a duck occupying one of our larger boxes. Also for the first time, a Brown-headed Cowbird went into one of our nests and laid two eggs on top of a Tree Swallow's clutch. A nest near Rackham, Manitoba, contained a litter of Minnesota Grey Squirrels.

Late in the season a farmer reported an albino Mountain Bluebird near Douglas, Manitoba, but we did not see the bird.

With continued aid from Mr. Ray Collins, we now have over 150 more of the new, deeper nests to set out. Our aim is to replace many of the older boxes. One other project for the future is to concentrate on a major line east to Macgregor, Manitoba. Perhaps sometime we may try and set out nests west of Broadview, Saskatchewan, to link up with the nest-line started by Lorne Scott of Indian Head.

At present, we have over 1500 boxes set out, although only 1200 are under our field check. The totals for 1966 are as follows:

Mountain Bluebird	79
Eastern Bluebird	47
Tree Swallow	628
House Wren	14
House Sparrow	20
Goldeneye Duck	1
Grey Squirrel	1 (litter of 3)
White-footed mouse	12

The balance were either not used, not checked, or the results are uncertain.

NATURE OBSERVATIONS

by **Brian Maluta**, Hudson Bay

While tracking through a swamp in the thickest part of a spruce bluff I came upon a nest of the Long-Eared Owl. She had five white eggs and she sure took after me, dive bombing me constantly until I left.

In the April newsletter I read of the nesting of Mourning Doves. We have a dove nesting in an unfinished magpie's nest. The magpie started the nest last spring and left it unfinished. The doves finished it and nested in it this spring. There are two very white little eggs very much like the pigeon's egg but smaller and rounder.

Watched a pair of Sandhill Cranes from a parked car. We were quite close to them. We could see their eyes, beaks, and a funny eye patch quite plainly.

We saw a mother moose give birth to twins in an open field by a stone pile on the thirteenth of May. They were quite tame. The elder of the twins would follow us around and crawl over the stone pile after us. We ran away so as not to touch it or have it touch us for fear the mother would reject it.

We have a Pileated Woodpecker in our wood bluff but I have been unable to find its nest. I have found the nest of the Hairy Woodpecker. It was full of noisy babies.

THE RUFFED GROUSE

by **Ellen Kuz**, age 12, Yellow Creek

It was a foggy morning when we went to play by some bushes. We saw a bird flying out of the bushes and then we saw it fly against the fence. We went to look where it was and we found it jumping around without its head. We took it to our room and showed our teacher. He said it must have cut its head off with the wire. We looked in the books and found out it was a Ruffed Grouse. Later on we found its head. One of my classmates took the bird to eat, one pupil took a leg, and one pupil took the feathers to make designs.

Editor's note: We wish to thank the following students from Yellow Creek who also wrote about the Ruffed Grouse: Rosemary Neimeth, Bobby Oleksyn, Elsie Neimeth and Linda Neimeth.

NATURE NOTES FROM YELLOW CREEK

The Bat by **Deborah Shewchuk**: One day a boy in our school brought a bat in a jar. The bat was brownish black. His wings and ears were black. When the teacher touched the bat it made an awful screeching noise. The bat sat in the jar and shivered. Later that day we let the bat go.

The House Wren by **Donna Matkowsky**: One day I heard a tapping noise in our bedroom. I went to see what it was. It was a House Wren stuck in between the windows. My mother went to open the window to

let it out. The wren was so fast that it flew out of the window into the living room. Then it started to fly against the windows. I caught it and took it outside. I let it go.

A Baby Owl by **Donna Matkowsky**: One day my father came from the barn with an owl. I asked him where he found it. He said he found it in the hayloft. We put the owl in a cage. We fed him raw meat. One morning when I went to feed the owl I found that it was dead.

An Owl by **Joan Popiels**: One day my father went into the bush. He found a baby owl. When he came home we put the owl in a big box. We fed him liver and eggs. Whenever I came to feed him he would snap his beak. One day I caught him. His wing was bitten up. I washed it. The next day we let him go. He flew away.

A Downy Woodpecker by **Stella Holinaty**: One day last year when I was walking along the road I found a woodpecker. It was hurt. I picked it up and found that it had a broken wing. I took it home, washed its wing and bandaged it. The next day I took the bandage off and the bird's wing was healing. I washed the wing and put a clean bandage on.

I was painting with yellow paint and the little woodpecker got some yellow on his feathers. I let it go the next day. The woodpecker came back this year. If you are wondering how I recognized it, it had some yellow on its feathers.

A Killdeer by **Iris Simon**: One day a killdeer was making a lot of noise. I was looking around to see what was wrong. All of a sudden I found a nest. I saw a killdeer near the nest. I

looked closer and saw it was a killdeer nest. When I came back the babies were gone. I felt very sorry for them. Next day they were flying around.

Yellow Warbler's Nest by **Rosemary Nemeth**: One spring day I went on a nature hike. I saw a Yellow Warbler. I knew it might have a nest so I looked and looked until I found it. There was one egg in the nest. Then there were two, then three. The eggs were light blue with brown spots. I could hardly wait until they hatched. The nest was made of wool, lined with wool and grass. I hope they come back next spring.

Wasps by **Colleen Shewchuk**: One day my brother went to the garage and saw a wasp nest. He started poking the nest with a stick. The wasps started flying around. An hour or two later my father drove into the garage and got out of the car and a wasp stung him. A few days later I went into the garage and the wasps were gone. I looked for the nest but I couldn't find it.

Picking Mushrooms by **Debby Gingaza**: My father and I went picking mushrooms. We could not find any so we went farther into the bush. We saw a nest on the ground so we started to investigate it. There were some eggs in the nest but dad and I knew that it would be wrong to take any of the eggs. The mother partidge came up behind us. She thought that we were going to take the eggs. She was very, very, very mad at us. She started doing just about everything you can think of to us. We were lucky enough to make it back to the car.

Notes from Letters

OBSERVATIONS OF A LARK BUNTING'S NEST

Lark Buntings have been very prevalent in our area in the past few years. I notice that they return to this area much later than most birds, and fly about in large flocks for some time prior to breaking up to nest.

This past year I taught in one of the few remaining rural schools which borders the Great Sandhills south of Portreeve and Lancer. The large school yard was allowed to grow to wild grass and weeds. One day the children found a Lark Bunting's nest built neatly in a patch of

sagebrush. We visited it daily until the closing of school on June 30, at which time there had been seven blue eggs for a week or more.

I lived during the week at the teacherage in the school yard and could walk over to see the nest. One evening I was surprised to find the male bird fly up off the nest. He flew to the fence and sat there for a few moments, then the mother bird flew back to him from the field. They greeted one another very affectionately for a moment, and as I had moved some distance from the nest, the mother bird flew directly to it and dropped into the grass. I couldn't help noticing during the many times I visited the nest, that I had to move only a short distance away for the mother bird to fly directly to the nest—not like other birds who try to avoid the nest when anyone is near.—*Mrs. Marie Peterson, Shackleton.*

THE ORPHAN

In mid-June, 1966, children brought a very young fledging Horned Lark to us. We were unable to discover the



Photo by Mrs. Brodie
Orphan Horned Lark

location of the nest so all our attempts to return it to its parents were unsuccessful. There was nothing else to do but hand-raise it and hope it would survive.

We fed it by eyedropper, a lukewarm gruel of boiled and sieved peas, beans, corn, barley and egg yolk. Surprisingly it survived. We gradually introduced small insects into the diet. Grasshoppers were a favorite, and all the neighbors' children kept a good supply on hand.

In time the bird learned to peck by itself. The beak, however, did not grow evenly and eventually top and bottom mandibles crossed over to such an extent it could not peck. We had to cut the beak with nail clippers. Obviously we were not feeding it the proper foods. A piece of cuttle bone, which it uses often, helps, but we still have to trim the bill every two or three weeks.

As wing and tail feathers started to grow the young bird learned to keep its balance and walked and ran actively around the room. We took it outside to teach it to fly. These attempts were proving fairly successful when, unluckily, a tangle with a cat left it with a badly mangled wing. Our hopes for an early release were gone. By the time the wing mended it was September and migration was beginning. We tried several times to release it near flocks of Horned Larks. Our bird would take off and fly strongly with the wind only to crash land a few spirals later. It did not seem to be able to take off from the ground.

We concluded that this one could not be returned to the wild. It is now four months old, a healthy, alert, handsome bird. It is not confined to a cage but is free in the one room. It is not interested in a water bath but it loves rolling and frolicking in fine sand which is always available. It is a regular show-off with an audience.

We feel badly that this "orphan" was taken from its nest and that we have been unable to return it to the wild.—*Joanne Brodie, Moose Jaw.*

PARTIAL ALBINO CANADA GOOSE

Fourteen miles north of Yorkton, Saskatchewan, there is a little lake known as Goose Lake. It was here, on May 21, 1966 that I first sighted a Canada Goose with partial albino colouring. At a distance the body of the goose appeared perfectly white, with black neck and white cheek. However, on May 28, I was able to come within approximately 125 feet and to observe this bird with field glasses. Gray specks could be seen along its back, fading down around the side, with some black in the tail. Its neck was dark gray with white streaks. The cheek seemed to show a wider patch of white than normal, and I was able to see a white patch on its forehead. At this time I was able to photograph the bird, using a 400mm lens.

I continued to observe this bird through the summer, finding that it would never associate with the main flock of eight Canada Geese that spent the summer at the lake. It could always be found at the north end, either on the water or grazing on the young grass just 300 yards from the water's edge.

On June 18, to my surprise, I found this goose with its normal-coloured



Telephoto by Larry Morgotch
Partial albino Canada Goose

mate, along with five young. Seeing the bird with its mate allowed a good comparison of the colourings. The young appeared normal in colour, resembling the other young on the lake. The pair and the five young later joined the main flock of Canada Geese, which then consisted of five pairs and a total of 19 young. By the middle of August, a total of 75 geese were counted. Once I observed them feeding along the edge of a wheat field just 100 feet from shore, picking the heads of grain that was still green. The white goose was among them.

It will be interesting to note the spring arrivals next year to see if the white goose will return to Goose Lake.—*Larry A. Morgotch*, 15A Bradbrooke Apts., Yorkton.

RODENTS PREYING ON BIRDS

House Wrens and Mountain Bluebirds nesting in birdhouses in our locality meet some difficulty from Red Squirrels and even, in a few cases, from Least Chipmunks. I have seen a squirrel emerging from a birdhouse containing a bluebird nest, and a chipmunk sitting on a House Wren birdhouse. In both cases the eggs inside the nest-box were destroyed. Squirrels often gnaw out a larger entrance to House Wren nest-boxes. I have overcome this danger by attaching a metal plate with a hole which allows only the wren to pass through. The carnivorous tendencies of Red Squirrels and Least Chipmunks were noticed only in the spring and early summer when apparently the food supply of these animals is limited.—*Bohdan Pylypec*, Yellow Creek.

1966 PRAIRIE NEST RECORDS

You are reminded that nest records for the 1966 season should be sent to the

PRAIRIE NEST RECORDS SCHEME

Saskatchewan Natural History
Society
Box 1121, Regina, Sask.

If you need more nest record cards, write to the same address.

LEPIDOPTERA (Cont. from p. 196)

For a detailed description of the climate and topography of the Perry River area the reader is referred to Hanson, Queneau and Scott (1956). The weather during the period in which this collection was made was generally sunny and clear during the day with maximum temperatures around 60°F. The entire collection was made in close proximity to the Perry River from its mouth to about 15 miles inland.

LIST OF SPECIES

- MELISSA ARCTIC, *Oeneis melissa* Fabr.
—one male and three females. One specimen, a male, of *O. m. semplei* Gibs. was also collected.
- ROSS' ALPINE, *Erebia rossii* Curt. — one specimen, a male. This species was also recorded by Hanson, *et al* (1956).
- ARCTIC FRITILLARY, *Boloria chariclea* Schneid — one specimen, a male. This species was also recorded by Hanson *et al* (1956).
- POLARIS FRITILLARY, *Boloria polaris* Bdv. — three males.
- FRIGGA, *Boloria frigga* Thun. — two males and two females.
- DINGY FRITILLARY, *Boloria improba* Butl. — two males.
- HECLA ORANGE, *Colias hecla* Lef. — two males and four females.
- NASTES SULPHUR, *Colias Nastes* Bdv. — one specimen, a female.
- Aspilates orciferarius orciferarius* Wlk. — two males and one female.
- Dasyuris polata* Dup. — one male.
- RICHARDSON'S ANARTA, *Anarta richardsonii* Curt. — one female.
- Sympistis labradorius* Staud. — one female.

The scientific names used in this list follow McDunnough (1938, 1939) and the vernacular names are taken from Holland (1898, 1904) and Klots (1960).

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CORRECTION

In the June, 1966, *Blue Jay* in the article on the Gray Jay by Joyce L. Smith editorial manipulation has introduced some error in the first paragraph on page 68. Riding Mountain National Park and the Spruce Woods Forest Reserve are the boreal forest sections within the parkland of south-western Manitoba, but Agassiz, Sandilands, Whiteshell, and Northwest Angle Forest Reserves are part of the continuous boreal forest in eastern Manitoba.—*The Editor*.

APOLOGIES!

In the last issue of the *Blue Jay* (Vol. 24:155) we failed to give credit for the note on the impaled bat. This note was submitted by Mr. A. J. Hruska, Gerald, Saskatchewan. Please accept our apologies for this omission.—*The Editor*.

"BANDING" INSECTS

Greetings to all *Blue Jay* members. The September Newsletter of the Federation of Ontario Naturalists asks us to watch for "banded" dragonflies. My wife and I have helped Dr. Urquhart of Toronto with his study of Monarch Butterfly migration for about 15 years.—*Frank J. Throm*, Overland Park, Kansas.

MOCKINGBIRD AT BLADWORTH

On June 29, 1966, I was looking at the weed situation in the crop when a slender bird with a long tail appeared from the east. It landed on a willow for a few seconds and then continued west. It had very noticeable white wing and tail patches and the body was greyish. I am sure it was a Mockingbird.—*Lawrence Beckie*, Bladworth.

The Blue Jay Bookshelf

ORIGINS OF AMERICAN CONSERVATION. Edited by Henry Clepper. 1966. The Ronald Press Company, New York. x + 193 pp. \$4.50.

This book presents a historical review of the Conservation Movement in the United States and as such, is both informative and useful. Chapters are included on a full array of conservation topics including wildlife, forestry, fisheries, soil, water, range, parks, and wilderness. Apart from being a strictly historical presentation, the book purports to relate history to the prediction of future trends in conservation. As Joseph L. Fisher states in the concluding chapter, "The ultimate reason for wanting to understand the origins of American conservation must be for the insights that can be gained regarding the future." This high purpose is seldom attained.

The history of conservation can be treated in two ways. The first is to outline the history of the destruction of the resource and follow this with a history of the legislative measures that brought about protection. The second approach is to attempt a history of the scientific advances that brought about present conservation concepts. Most authors have attempted to blend the two approaches to some extent. Admittedly, some aspects of conservation (e.g., parks and wilderness) do not have much of a scientific history, but only in the sections dealing with fisheries have the two approaches been blended successfully. In fact, the fisheries subsection, "Coastal and Marine Waters" by Clarence P. Idyll is by far the most exciting reading in the book. Here legislation and science are blended in an informative way and this chapter is the only one that completely fulfills the purpose of the book—to use history as a predictive basis for the future. None of the other authors has adequately explained how the past

struggles of the conservation movement can enable us to anticipate and solve the problems of the future, or even, for that matter, the problems of the present. In the concluding chapter, Joseph L. Fisher is greatly concerned with the problems of exploiting resources more efficiently but gives scant consideration to the idea of retaining a stimulating and worthwhile living space.

In addition to its basic failure, the book must be subjected to criticism on other grounds. In a book of such limited size it should have been the duty of the editor to minimize the amount of overlap in content between chapters. In fact considerable space is taken up with repetitive treatments of how the west was won and how the land was denuded. The chapters on Soil and Water overlap broadly, as do those on Parks and Wilderness and Scenic, Historic and Natural Sites.

The section on Wildlife Conservation is most inadequate. In particular, there is scant record of the development of the scientific conception of animal populations that have placed wildlife conservation in the realm of applied science.

The opening sentence of the book, "Within our fifty states are the richest treasures of diversified natural resources of any nation on earth," is the sort of statement that should have no place in what is otherwise a semi-scientific treatment.

The book is useful as a historical record of the Conservation Movement and may be of particular interest to people who lived through those periods when resource exploitation in the United States nearly achieved its narrow ends. As a basis for predicting future conservation problems and their solutions, the book may be of some value, but is not worth nearly as much as a series of recent textbooks in the various conservation disciplines.—*D. H. Sheppard, Regina.*

THE MAMMALS OF EASTERN CANADA. By Randolph L. Peterson. 1966. Oxford University Press. xxxii+465 pp. 8 color plates, 233 figs., 107 maps. \$15.95.

Dr. Randolph Peterson, Curator of the Department of Mammalogy at the Royal Ontario Museum in Toronto, has tried to write a book "useful to a wide audience without sacrificing accuracy and readability on the one hand and scientific detail and substantiating evidence on the other." He has succeeded admirably in this aim.

Short introductory chapters serve to introduce the reader to the subject. The essay "Mammals and Man" points out the close relationships man has had with mammals from earliest times. Mammals have been an important source of food and clothing; they have served him as guardians, beasts of burden, pets, and symbols of worship. "The Class Mammalia" and "The Origin and Classification of Mammals" provide a concise introduction to mammalian taxonomy.

The main body of the text is devoted to accounts of the 122 species of mammals (102 native, 9 introduced, 10 domesticated, and 1 extinct) which are known to occur in eastern Canada—an area here defined as Ontario, Quebec, the maritime provinces, and the off-shore waters. Although many of the mammals of eastern Canada do not occur in Saskatchewan, and a number of our species do not occur in eastern Canada, this book includes 57 of the 76 native species recorded for Saskatchewan. In the presentation of each order of mammals there is a brief description followed, where necessary, by keys to the families, genera, and species. Each species account is divided into sections dealing with description, distribution and variation in eastern Canada, habitat, habits, and general remarks.

The information in each of the species accounts is accurate, concise, and informative. The description includes gross features and diagnostic characteristics, color, and measurements of body and skull. Excellent

line drawings of three views of the skull are included and add appreciably to the ease of identification. A glossary of the scientific terms used in the descriptions is included at the back of the book. The distribution of each species in eastern Canada is described briefly and shown graphically on a range map of the area, with a small insert map showing the range in North America. The section on habitat describes the normal environment of the species. In his discussions of general habits, Dr. Peterson has avoided the common tendency to present a miscellany of unrelated facts, and in a readable style has provided useful information on food habits, reproduction, and behavioral patterns. The economic status of the species, and areas where further study is needed are two examples of the topics discussed under remarks.

Over one hundred line drawings of the species are included which, unfortunately, do not achieve the same high standard of quality as the text; many are mediocre. A notable exception is the beautiful series of illustrations of the hares and rabbits which not only accurately portray the various species but capture the vitality and personality of the mammals. Eight pages of color illustrations are included. While they have undoubtedly added considerably to the cost of producing the book, they do not make an appreciable contribution to its value.

Dr. Peterson points out that our "native mammals are an integral part of the renewable natural resources" and their conservation "calls for some understanding and appreciation of the interrelations of the multitude of facets of the total environment." Anyone reading this book should gain this understanding and appreciation from the detailed accounts of life histories, behavior, and activities of the mammals in their natural environment.

Every person seriously interested in the study of mammals should own a copy of this book. Others will find it a useful reference to seek in a library.—*W. H. Beck*, Regina.

EVOLUTION OF WILDLIFE CONSERVATION IN CALIFORNIA

Since it is difficult to remain unbiased about problems which touch us closely in some way, it is often of value to look at or listen to the problems of others. It was with this idea in mind that I purchased **THE DESTRUCTION OF CALIFORNIA**, by Raymond F. Dasmann. (1965. The Macmillan Company, New York; Collier-Macmillan Canada Ltd., Toronto. \$5.95 in U.S.A.)

Raymond F. Dasmann of Eureka, California, is worried about California's rapid increase in population, much of it by immigration. He says, "no one seriously wants to turn back the clock . . . but one can request . . . that we stop for a moment and take stock . . . and make sure that the world we are building in the West will be one worth living in." The book begins with a description of California as it used to be. The threat to California comes "from all who do not know what California was, cannot see what it is, cannot dream of what it could be" . . . and from "those to whom money is the single standard against which all else must be measured."

The second chapter traces the history of man in California. The Indians were "a highly diversified array of people speaking many languages . . . it is estimated that one-tenth of the total Indian population of the United States, before white settlement, some 130,000 people lived in California." The Spanish visited California in 1543, but it was not till 1769 (less than 200 years ago) that a colonizing expedition was sent and "California, for better or worse, was to be added to the civilized world. For eighty years there was leisurely living in California and then gold was discovered and the modern destruction of California began."

In the third chapter Dasmann traces the history of wildlife conservation in California. He wishes he could awaken in others a desire for

wildlife conservation such as was awakened in him by the books of Ernest Thompson Seton and Jack London.

When California was first settled, wildlife was a compelling factor of the environment. The early scene painted by the Spanish and later by the first American visitors is of incredible abundance of wildlife. "The Central Valley sheltered herds of tule elk, pronghorn antelope, and black-tailed deer. One man claims to have seen 40 grizzlies in sight at once in Mattole country. John Muir was impressed with the abundance of the bighorn sheep in the lava-bed country north of Shasta, and of the many herds that occurred along the Sierra Nevada to its southern limits. . . . All the early visitors wrote of the coyote. . . . Dominating the avian world was the giant condor . . . perhaps the most fascinating sight was the great mass of waterfowl, shore birds, and marsh birds that filled those marshes dominated by the tall bulrush, the tule, in the Central Valley. Here were birds in the tens of millions that darkened the sky when migration sent them winging northward."

"The thriving animal life attracted the fur trappers . . . the great slaughter that was overtaking the edible forms of game, and the poisoning campaign that was to decimate the carnivores. It is inevitable that wildlife had to go from much of California. Grizzly bears cannot be raised in sheep pastures, nor are wolves welcome in the suburbs. Great herds of elk and antelope do not fit well into orchard or wheat field. But the manner and the thoroughness with which California's wildlife was destroyed are a blot on the record of the Americans."

"Starting with the mining camps of the Gold Rush, where the demand for meat was insatiable, market hunting became an important part of the Californian scene . . . through-

out California, in the sixty years from 1850 to 1910, a massive faunal change, matched only by the post-glacial extinctions, took place. Some species disappeared forever. . . . It was against this dismal background of mass slaughter and game scarcity that the game-conservation movement had its beginnings. . . . It was not until 1907 that the legislature passed a bill requiring the purchase of a licence by anyone who wished to hunt. . . . The first game wardens encountered people who felt that the state had no real authority to regulate the killing of game. Hunting was regarded as a natural right."

The California Department of Fish and Game since 1907 has been supported entirely by revenue obtained from licences and fees paid by those using the fish-and-game resource. Because the money comes from the sportsmen, they feel a proprietary interest in the state department and they have been alert and active in protecting their interests. The department in turn has in some ways behaved as though it existed to serve the licensed hunters and fishermen primarily. This has led to an interest in game animals only, rather than wildlife in general. "Deer and ducks, quail and pheasants became important, and most research and management money went toward the enhancement of their numbers. Bighorn and wolverine, ruffed grouse and orioles were considered much less important. Anything rare, remote, or unable to respond quickly to management has been to some degree neglected. The sportsmen are not to be blamed for protecting their own interests. Indifference or inactivity on the part of the general public who should have been interested, but were not, is the cause."

The general public has also proved, at times, to have misconceptions about game management. The deer herds protected by hunting laws and an absence of natural predators began to multiply in an excellent habitat created by fire and logging which were destructive of other resources. Biologists sought to regulate

the size of the deer herds by relating the number of deer shot in an area to the annual rate of production in that area. To achieve this balance it was essential to establish some "antlerless" deer hunting but many game wardens and Fish and Game people and public were violently opposed to this. The controversy still rages.

Bitter controversies have also raged over the management of pheasants, ducks, trout and salmon. There has been such persistent interference on the part of legislature that the Fish and Game department has not been free to use the best knowledge available. Mr. Dasmann urges that public and legislature give more support to the biologists, managers and wardens of wildlife departments. The greatest variety of wild animals should be brought back to every area of the state where such restoration is still possible. The aim should not be for maximum bags of a few kinds of game but the restoration of wildlife variety, including predators, to enrich the lives of each person in the state. Such a policy of wildlife conservation would soon have the support of most of the public, for the life of people can be enriched by the presence of wild creatures in man's environment.

In chapters 4-11 Dasmann describes other aspects of the destruction of California, including the air pollution problem, the very critical water problem and the spectacular fight to save some of the tall timber. The chapter with most interest to us in southern Saskatchewan is chapter 4 in which he describes "the prairies that vanished"; a sad tale which we should all read.

The story sounds so familiar that it is easy to forget that we are reading "The Destruction of California" and not about the destruction of our own province. However, Saskatchewan is younger and pressures on our natural resources have not yet been completely destructive; so we may if we are sincerely interested still save something of Saskatchewan as it was for the future. How can we achieve this objective?—*George F. Ledingham, Regina.*

THE WORLD OF THE BOBCAT. By Joe Van Wormer. 1964. J. P. Lippincott, Philadelphia & New York. 125 pp. Illustrated. \$6.00.

This book is the fourth of the series describing animals in North America. The photographs in black and white are excellent and so numerous that they cover most aspects of the bobcat. The writer has described the life of the animal in an easily readable form, but he is careful to give credit for observations to the first person who made them. The life of the bobcat is described in spring, summer, fall and winter, and many interesting anecdotes are recalled illustrating its manner of life and character, as well as the legends associated with it. The information upon its predation of domestic animals is enlightening, as are the descriptions and photographs of wild animals which make up the majority of its food. The kind of photographs and style of writing make this a suitable present for young people and an excellent addition to any natural historian's library.—*Thomas White*, 1-2105 Cornwall St., Regina.

THE BLUE JAY BOOKSHOP

offers some suggestions of books that would make excellent gifts. Saskatchewan residents add 4 per cent tax.

BIRDS OF THE NORTHERN FOREST. Paintings by J. F. Lansdowne, Text by John A. Livingston. 1966. Published in Canada by McClelland and Stewart. \$20.00.

PRAIRIE WILDFLOWERS by Lloyd T. Carmichael, hard covers, \$3. Next spring start to identify positively those native wildflowers that you have always wondered about. Carmichael's book is just what you want for easy identification; the arrangement of description and photographs of plants (in black and white) on opposite pages make it ideal. (Ages 11 up.)

ON AGGRESSION by Konrad Lorenz, hard covers, \$6.50. "No one concerned with animals whether in the home, on the farm, or in the wild . . . and above all no one concerned with the overriding dilemmas, posed by population growth and by war can afford to neglect Konrad Lorenz's book . . . packed with entrancing detail, profound wisdom and deft humour. The book is a masterpiece." W. H. Thorpe, "The Manchester Guardian Weekly".

DRIFTWOOD VALLEY by Theodora C. Stanwell-Fletcher. Hard, \$7.25. An account of the life of the authoress and her husband in north-central B.C. during 1937-41. There is an appendix of plants and animals observed; descriptions of plants, birds and insects are accurate and readable. The book is a delight. (Ages 11 up.)

BIRDS IN THEIR HOMES by Addison Webb and S. M. Kimball. Hard, \$4.00. Here is the way to interest your younger children in the lives of our common birds. It contains a balanced combination of description and drawings, and would be suitable for children from Grade III upwards, or for reading to younger children. An ideal gift for a younger child interested in birds.

THE "BEAUTIFUL CANADA" CALENDAR 1967. \$1.00. The same reliable collection of colourful Canadian scenes which has characterized this line for years. New — different — beautiful — Canadian!

CHRISTMAS BIRD COUNT 1966

In your report, list the numbers of each species seen on the **ONE BEST DAY** between December 21 and January 2 (inclusive). In addition, list other species (number of individuals and date seen) between December 21 and January 2.

Send reports as soon as possible to
MRS. MARY HOUSTON
863 University Drive, Saskatoon.

SASKATCHEWAN NATURAL HISTORY SOCIETY

FINANCIAL STATEMENT — YEAR ENDING SEPTEMBER 30, 1966

INCOME

Memberships (including sales of Blue Jay)		\$5,406.36
Spec. Pub. #1 — Guide to Sask. Mammals	81.35	
Spec. Pub. #2 — Birds of the Sask. River	149.15	
Spec. Pub. #3 — Birds of Regina	66.22	
Spec. Pub. #4 — Blue Jay Index	8.00	
Spec. Pub. #5 — Birds of Lake Athabasca	64.89	
— Birds of the Elbow	8.78	
	<hr/>	378.39
Sales of other merchandise	\$1,991.63	
Less cost of sales	1,349.51	
	<hr/>	642.12
Donations (general)	333.67	
Summer Meeting	128.59	
Interest (bank account and bonds)	156.20	
	<hr/>	1,638.97
		<hr/>
		<u>\$7,045.33</u>

EXPENSE

Printing of Blue Jay (4 issues)	\$4,430.59	
Printing and postage re: Newsletter	403.08	
Honoraria	450.87	
Postage	336.13	
Office Supplies and Equipment	388.39	
Advertising and Promotion	641.33	
Annual Meeting	5.97	
Bank charges less U.S. premium	36.22	
Executive meetings and miscellaneous expense	40.55	
	<hr/>	\$6,733.13

EXCESS OF INCOME OVER EXPENSE	<u>\$ 312.20</u>
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STATEMENT OF ASSETS AND LIABILITIES AS AT SEPTEMBER 30, 1966

ASSETS

Cash on hand ..	\$ 50.00
Cash in bank (current)	3,224.38
Cash in bank (savings)	4,198.38
Government of Canada bonds	300.00
Stock	561.01
Accounts Receivable	71.51
	<hr/>
	<u>\$8,405.28</u>

LIABILITIES

Trust Fund (re: Refuge and Sanctuary) ..	\$ 709.40
Transfer of Wait estate	500.00
	<hr/>
	\$1,209.40
Trust Fund (re: Yorkton Nat. Hist. Soc.)	130.66
Owing re: Honaria	50.00
	<hr/>
	\$1,390.06

NET WORTH

Balance as at September 30, 1965	\$6,723.02	
Adjustment: transfer to Sanctuary Fund	20.00	
	<hr/>	\$6,703.02
Increase for year ending September 30, 1966	312.20	
	<hr/>	\$7,015.22
		<hr/>
		<u>\$8,405.28</u>

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All items for publication should be submitted to George F. Ledingham, Acting Editor, 2335 Athol Street, Regina.

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Send all renewals and new memberships to Frank Brazier, Treasurer, SNHS, Box 1121, Regina, Sask.

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